FOREST PRACTICES

CODE

of

BRITISH COLUMBIA

Forest Development Plan Guidebook

Second edition

December 2002

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PREFACE

Guidebooks are one of four components of the Forest Practices Code. The others are the *Forest Practices Code of British Columbia Act*, the regulations, and the standards. The *Forest Practices Code of British Columbia Act* is the legislative umbrella authorizing the Code's other components. It enables the Code, establishes mandatory requirements for planning and forest practices, sets enforcement and penalty provisions, and specifies administrative arrangements. The regulations lay out the forest practices that apply province-wide. Standards may be established by the Chief Forester where required, to expand on a regulation.

Forest Practices Code guidebooks have been developed to support the regulations, but are not part of the legislation. The recommendations in the guidebooks are not mandatory requirements, but once a recommended practice is included in a plan, prescription, or contract, it becomes legally enforceable. In general, they describe procedures, practices, and results that are consistent with the legislated requirements of the Code.

The information in each guidebook is intended to help users exercise their professional judgement in developing site-specific management strategies and prescriptions to accommodate resource management objectives. Some guidebook recommendations provide a range of options or outcomes considered acceptable under varying circumstances.

Where ranges are not specified, flexibility in the application of guidebook recommendations may be required, to adequately achieve land use and resource management objectives specified in HLPs. A recommended practice may also be modified when an alternative could give better results for forest resource stewardship. The examples in many guidebooks are not intended to be definitive and should not be interpreted as the only acceptable options.

NOTE: This guidebook is for guidance purposes; the users of this guidebook should always refer to the current legislation and regulation for the most current wording and requirements for forest development plan content, review, and approval.

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Purpose and Layout of This Guidebook

This guidebook is directed at forest resource managers who prepare, review, and approve forest development plans (FDPs) for major licensees and the MOF Small Business Forest Enterprise Program. The *Forest Practices Code of British Columbia Act* (*FPC Act*) and the Operational Planning Regulation (OPR), identify the legal requirements for the content of an FDP. This guidebook provides examples of how information may be gathered and presented in the plan. Examples and key information to the legislation are provided throughout. Organization of the guidebook is based on the steps taken to prepare a plan. Figure 1 illustrates these steps. Subsequent sections of the guidebook are colour coded by the subject areas outlined in Figure 1.

The principal objective of this document is to encourage the preparation of high quality FDPs. To help achieve this goal and further the understanding of forest development planning, the intent of the legislation is explained throughout the guidebook.

A legislation checklist has been created in Appendix A. In the electronic version this checklist is hyperlinked to pertinent sections of the guidebook that explain FDP content as defined in legislation.

This guidebook does not apply to forest FDPs prepared for woodlot licences or community forest agreements. FDPs for these tenures are guided by the Woodlot Licence Forest Management Regulation and the Community Forest Agreement Regulation.

This guidebook is not a substitute for other guidebooks referred to in the text. All relevant Code guidebooks should be reviewed when preparing an FDP. An electronic copy of this and other guidebooks may be found at the MOF web site for guidebooks:

http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/guidetoc.htm

Reference Documents

The following documents provide important information on the preparation, approval, and general administration of FDPs. It is recommended that anyone working with FDPs be familiar with this information.

Administration of Forest Operational Plans – Chapter 1 – FDPs

Chapter 1 of the Administration of Forest Operational Plans (AFOP) provides advice on all aspects of FDP administration and supports the administrative process put in place by statutory decision-makers (SDMs) leading to approval of an FDP. This document explains how to proceed through the various stages of FDP administration from gathering information to exemptions, extensions, and expiry. It is a collection of operational advice that has been provided to field staff, and it is updated regularly to incorporate new Code bulletins and the latest advice provided. It is the responsibility of the Operations Division's Resource Tenures and Engineering Branch. The target audience is primarily the SDMs and their staff. People preparing and submitting FDPs also benefit from this

information. This material is distributed within the Forest Service and to forest companies, but copies are available from any Forest Service district or regional office.

Guidebooks

Guidebooks are primarily the responsibility of the Chief Forester's Forestry Division. The target audience for this information is people involved in the preparation of FDPs. The FDP guidebook also assists government agencies and the public in understanding FDP content and the review and comment process. Guidebooks are intended to provide information and recommendations that may be followed to meet Code requirements. Six guidebooks are referenced in the Code. Specific referenced portions of these guidebooks must be followed. The *Forest Development Plan Guidebook* is not referenced in the Code. The suggestions, best examples, and information provided in this document may be followed in preparing a plan. Ultimately, statutory decision-makers approve these plans and exercise their discretion based upon the legislative requirements of the Code.

FDP Template

In June 1998, coincident to the changes in the OPR, a Word document Template for the forest development plan was released by a multi-agency and industry group called the Operational Planning Standardization Team (OPST). The Template organized the format, presentation, and mapping symbols for an FDP and was supported with a user guide and supplement.

Use of the Template is not mandatory. However, its use is encouraged, as there are efficiency gains in the preparation, submission, and review of an FDP with a standardized, Code-compliant format. In some districts or regions, modified versions of the original Template are used. In May 2001, minor revisions were made to the Template to address changes in the OPR. To find more information or download the Template, access the following web site:

http://www.for.gov.bc.ca/ftp/Branches/Information_Systems/external/!publish/Web/FDPTemplate/

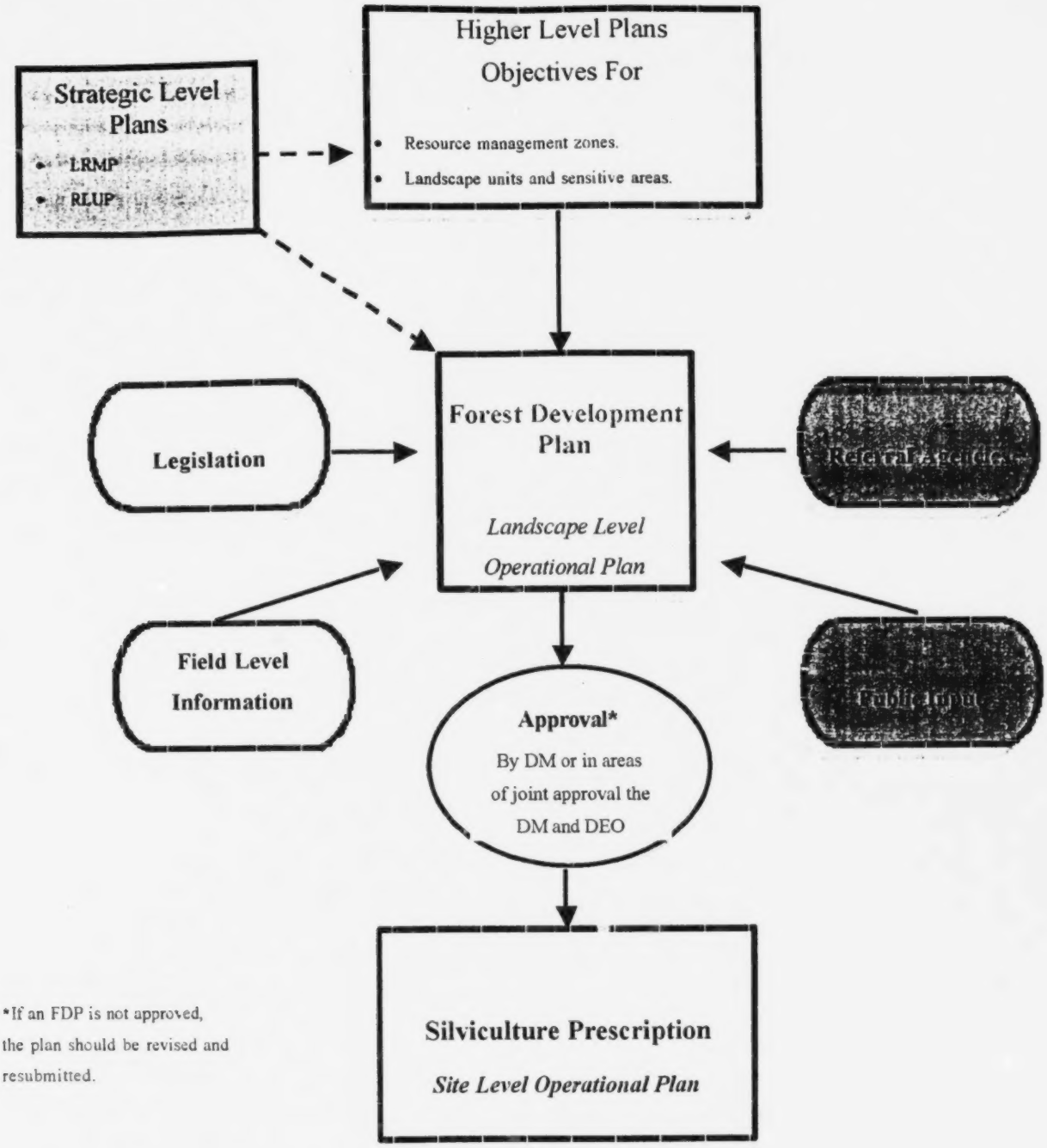
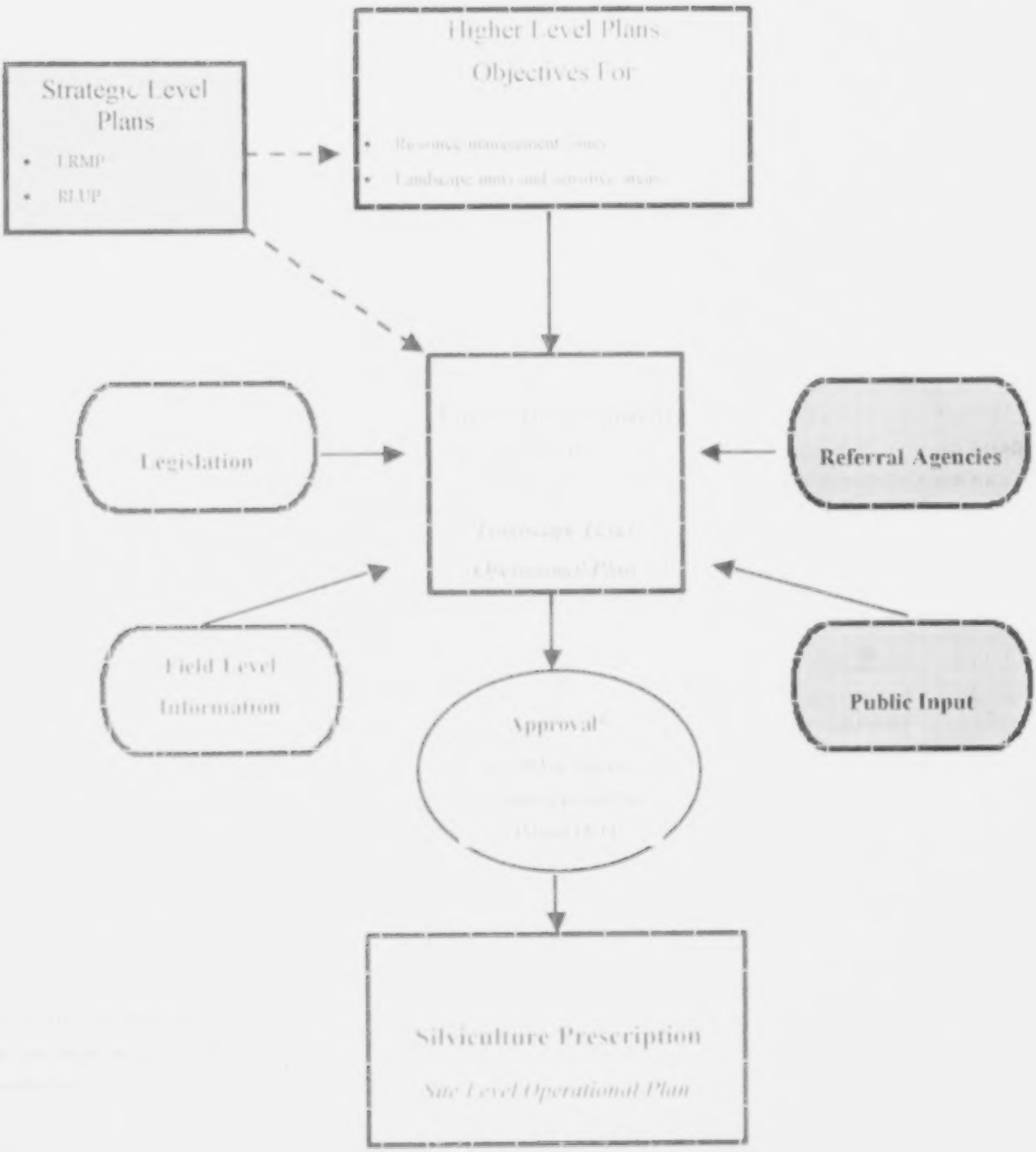


Figure 1: Forest Practices Code planning framework as it relates to the forest development plan.


Higher Level Plans
Objectives For
Strategic Level Plans
• LRMP
• RLUP
Legislation
Referral Agencies
Field Level Information
Public Input
Silviculture Prescription
Site Level Operational Plan

1 HIGHER LEVEL PLANS

The *FPC Act* shifted contractual obligations for forest planning into law, and standardized the planning framework. Under the *FPC Act*, there are two levels of planning: strategic or higher level planning and operational planning.

1.1 Higher Level Plans

Higher level plans (HLPs) are land use and forest resource management objectives set during strategic planning. This includes objectives that may be established for the general public, First Nations, government agencies, and commercial interests. All these groups have the opportunity to take part in the strategic planning process leading to the establishment of resource management objectives (HLPs). HLPs provide direction that affects the content and approval of operational plans, and ultimately, the forest practices on the ground.

FPC 1

Resource management objectives established as HLPs are legally enforceable. Operational plans such as the forest development plan must be consistent with HLPs. Operational plans are generally for smaller land areas than are HLPs, such as a drainage, landscape, or forest site. They include locations and descriptions of forest resources based on known information and best information available and provide general information on the forest practices that are planned for the management, use, and conservation of those resources. Operational plans are proposed by forest and range tenure holders or government, and are approved, or given effect, by the district manager (DM), or the DM and the designated environment official (DEO) of the Ministry of Water, Land and Air Protection (MWLAP) in areas of joint approval.

HLPs, when declared, establish the broader strategic context and objectives for forest resource management in a given area.

FPC

Operational plans must be consistent (not in material or significant conflict) with these objectives.

10(1)(d)(i)

HLPs are described in the Forest Practices Code as the objectives for:

- resource management zones (RMZs);
- landscape units (LUs) or sensitive areas; and
- recreation sites, recreation trails, or interpretative forest sites.

FPC 2

The establishment of these planning units and their resource management objectives generally involves the MOF, the MWLAP, and review by forest tenure holders and the public. Part 2 of the Code describes the establishment procedures.

- RMZs and their objectives are established at the ministerial level (MOF, MWLAP).
- LUs and sensitive area HLPs are established by the DM, with MWLAP approval.

- Recreation sites and trails are established by the Chief Forester. Objective setting has been delegated to the DM.

As of June 12, 2000, an RMZ, LU, and sensitive area or their objectives (HLP) take effect on the date of their order or a later date specified in the order.

Bulletin 24, 25

Public review and comment is required for RMZ and LU HLPs. HLPs cannot be established under non-Code legislation or policy. Once an objective is declared an HLP, it is managed and enforceable through the Code.

For further information see FPC Implementation Bulletin 24 – Strategic Land Use Plans, and 25 – Requirements for Consistency Between FDPs and HLPs.

1.2 Operational Plans

The Code includes four types of operational plans:

- forest development plan,
- silviculture prescription,
- stand management prescription, and
- range use plan.

FDPs are the key operational plans and the principal subject of this guidebook.

1.2.1 Forest development plans

Historical perspective

The forest development plan is an integrated forest resource management plan that originated from the Five-Year Development Plan. Before the FPC (1995), operational planning and forest practices were contractual obligations, described in the licence document. Planning provisions in the licence document (FL and TFL) included the term (five years), plan content, signature requirements (licensee and registered professional forester), and the review process. In addition, the Five-Year Development Plan was required to be consistent with a Management and Working Plan, which outlined objectives and standards for the licence. Local resource use plans were developed in areas of special concern, and the Five-Year Development Plan followed direction from these plans as well. The *FPC Act* legislated many of these planning elements into FDPs.

Purpose

The purpose of an FDP is to provide the public and administering government agencies with information on the location (and scheduling, where critical) of proposed roads and cutblocks. The plan shows how the proponent will adequately protect biological diversity, water, fish, wildlife values, and other identified forest resources, while recognizing the economic and cultural needs of peoples and communities.

FDPs are landscape level operational plans that provide general objectives and measures that are used to define the site level practices of the silviculture prescription. FDPs are a conduit between HLPs and SPs, and consist of text, tables, and maps that describe and illustrate:

- what forest resource values are within the planning area,
- how harvesting and road development will be managed for the planning period,
- what measures will be carried out to protect forest resources, and
- how the plan is consistent with the objectives established in HLPs.

The *FPC Act* requires that the FDPs are advertised to give the public and resource agencies an opportunity to review and comment on the plan, and guide the preparation and approval of subsequent operational plans (such as silviculture prescriptions), or harvesting authorities (such as cutting permits, road permits, or timber sale licences).

FPC 18(1)
19(1)

Wherever a major licensee, woodlot licensee, community forest agreement holder, or the Crown intends to harvest timber under the authority of the *Forest Act*, an FDP must be submitted in compliance with the *FPC Act* and associated regulations.

The DM may only invite applications for a timber sale licence, and licensees requiring a cutting permit may only apply for a cutting permit, if the cutblock for which the harvesting authority applies is identified on an approved FDP.

Consistency

FDPs must be consistent (i.e., not in material conflict with any HLPs declared within the area under the plan) four months (or such other time as specified in the HLP, the *FPC Act*, the regulations, or standards) before the plan is submitted for the DM's approval or given effect by the DM. Blocks that have full protection under section 22 of the OPR do not have to meet this requirement. A clear reference to all HLPs, and the measures to meet their objectives in the FDP, will help ensure consistency.

Intent

The requirement for consistency ensures that the objectives of a higher level plan are achieved operationally through the FDP. The FDP must be consistent with any HLP, and, to avoid conflicting direction, the silviculture prescription must be consistent with the FDP. Where a silviculture prescription has no applicable FDP (e.g., in the reforestation of a backlog cutblock), the SP must be consistent with any applicable HLP.

OPR 20(1)(b)(iv)

For a cutblock to be shown as a proposed category A cutblock on a proposed FDP, the plan should describe the measures to achieve any declared HLP objectives. It is important that these statements be unambiguous (measurable), with clear commitments to fulfil the objectives for the resources. In the FDP Template, these statements are presented in section 2.1.2 *Measures to Address Higher Level Plans*. Alternatively, these statements may be included in section 3 *Measures to Protect Forest Resources*.

For further information on this subject, refer to:

- *Higher Level Plan Policy and Procedures*, June 1996 and Ch. 5, December 1996.
- *Landscape Unit Planning Guide*, November 1999.

Web site: http://www.for.gov.bc.ca/hfp/planning/planningsection/planning.htm

2 LEGISLATION

2.1 Administration

The *FPC Act* and the OPR specify a number of administrative requirements for FDPs, including: exemptions, submissions, review and comment, referrals, approvals, term, period of the plan, extensions, and amendments to the plan.

The objectives of the administrative requirements in the *Act* and regulations for FDPs are:

- to ensure that the forest development planning process is fair, efficient, and effective;
- to ensure that government agencies, other stakeholders, and the public have opportunities for input to the planning process; and
- to ensure that plans are current and adequately address forest management issues in the plan area.

All aspects of FDP administration are discussed in the *Administration of Forest Operational Plans – FDP* guide. This document may be obtained through your local forest district staff.

2.1.1 Approval

FPC 41(1)

FDPs and their amendments are approved under section 41 of the *FPC Act*. In accordance with that section, the DM must approve an FDP or amendment if it meets the following test:

- it was prepared and submitted in accordance with the *Act*, regulations, and standards, and
- the DM is satisfied that the plan or amendment will adequately manage and conserve the forest resources.

The DM gives effect to SBFEP FDPs under *FPC Act* 40. The test of giving effect under *FPC Act* 40 and OPR 1.1 is the same as approval of the FDPs for major licensees under *FPC Act* 41.

Some areas of the forest land base require joint agency approval of FDPs.

2.1.2 Joint approval

FPC 41(6)

OPR 2

Joint approval of an FDP or amendment, or a portion of an FDP by the DM and a designated environment official, is required for:

- any area specified in a higher level plan as requiring joint approval,
- community watersheds, and
- any other area where the two officials agree that joint approval is appropriate.

2.1.3 District manager guidance

In preparing an FDP, the proponent should refer to guidance provided by the DM. Guidance may be in several forms, including standard operating procedures, letters, or memos. This guidance gives the proponent an understanding of the expectations of the DM for completing the plan.

An important step in preparing an FDP is to meet with district staff and discuss what information and guidance are available. This meeting should occur well before plan preparation to eliminate any surprises in information expectations and to help ensure that the best information is included in the FDP. Ideally, ongoing communication should be maintained throughout the planning cycle.

Intent

Statutory decision-maker guidance ensures that the expectations for the requirements of an FDP are clearly understood by the licensees and agencies, and that the preparation, review, and approval process for the FDP is more efficient.

2.1.4 Four-month rule

FPC 10(1)(d)

All FDPs must meet the requirements of the *Act*, the regulations, and the standards that are in effect four months before the date the plan is submitted for the DM's approval, or given effect by the DM, unless otherwise specified in an applicable higher level plan, the *Act*, regulations, or standards. The four-month rule helps to ensure that the "rules" do not change between the time the plan is submitted for approval and approved. "Submitted for approval" means the date of submission of the final draft at the end of the review period. The four months are counted back from that date. The four-month rule is an important provision that allows a transition period for the introduction of new legislation, regulations, and standards affecting the FDP.

Intent

The four-month rule provides stability to the FDP proponent in that investments in plan preparation, including field work, will not be lost at substantial costs to the proponent due to a new or revised *Act*, regulation, higher level plan, or standard, unless otherwise specified in the *Act*, regulation, HLP, or standard.

2.1.5 Plan period and term

OPR 3

Period

The *Act* requires that the plan contain information on the forest practices being proposed for a period of at least the next five years. In limited circumstances as described in OPR 3(3), the period of the plan may be reduced with the consent of the DM, and, where required, of the DEO.

Intent

A planning period of at least five years provides a definitive planning horizon for resource planning and operational stability, and enables adjustments to accommodate the dynamic characteristics of the forest environment.

Term

The OPR defines the term of the plan as the time from which the plan takes effect until it expires. The term of an FDP is one year; however, the DM may approve a term of up to two years.

FPC 18(7)
19(4)

Extension: The term of the plan may be extended by the DM for up to one year beyond the original approved term. If the term is extended, the proponent of the plan must publish in a local newspaper a statement approved by the DM, which indicates:

OPR 3, 4

- the agreement for which the FDP was prepared,
- the term of the current FDP, and
- the period of the extension received.

FPC 18(8)
19(5)

The regional manager is responsible for extending an SBFEP FDP.

Note: If the term of an FDP is extended, the plan must be brought up to the legislative standards in effect at the time of the extension.

Intent

The term of an FDP establishes the length of time the plan will be in effect. The regulation provides the DM with flexibility in approving a term length, in order to accommodate different degrees of stability in the forest environment and planning considerations. A stable forest environment may enable a reduction in administrative costs by using a two-year term. Where the forest environment and planning elements are less stable, a one-year term may be appropriate to avoid a large number of amendments.

2.1.6 Signatures

FPC 10(1)(e)

OPR 10

The *Act* requires that every FDP must be signed and sealed by "a professional forester." The *Foresters Act* requires that it be the professional forester who prepared the plan. The OPR also requires that the plan contain the signature of the person required to prepare an FDP; that is, the licensee or the DM for the SBFEP.

The signature of the licensee and the professional forester's signature and seal usually appear on the title page. The signatures and seal should be dated.

Professional accountability is an important aspect of these signed and sealed documents. Professional standards are ensured in part through the *Foresters Act* and the bylaws governing the Association of British Columbia Professional Foresters.

Intent

The signatures represent responsibility and accountability for the plan. The forester's signature and seal ensure that a professional forester, trained and knowledgeable in forest resources management, prepared the plan. The signature of the licensee representative legally binds the licence holder to the commitments made in the plan.

2.2 Area under the Plan

OPR 9

Code Bulletin 22

In drafting a plan, the proponent must decide how large an area to cover. Too large an area results in unreasonable planning costs. Too small an area results in inadequate resource planning.

Intent

The area under the plan should be a geographic planning area sufficient in size to include all the area affected by the timber harvesting and road construction operations.

Before commencing a new plan or new drainage, the proponent should discuss with the district the area and forest resources to be addressed under the plan. If the DM determines that the area is not sufficient in size to include all areas primarily affected by the proposed development activities, then the DM can specify the area that the plan must address. This determination may be reviewed and appealed under Division 4, Part 6 of the *Act*.

2.3 Best Information Available and "Known" Information

OPR 5

A person required to prepare an operational plan must use the most comprehensive and accurate information available to them, subject to any "known" information.

OPR 1

Code Bulletin 32

"Known" information is a feature, objective, or other thing referred to as being "known" in the OPR, contained in an HLP, or made available by the DM or DEO four months before the FDP is submitted for approval. Only the DM, DEO, and an HLP can make information "known." All available information is not necessarily "known" information.

"Known" information is limited to a feature, objective, or other thing actually referred to by the word "known" in the OPR. For example, guidebooks are not "known" information for the OPR.

Factors such as wildlife habitat areas (WHAs) are defined in the OPR. Therefore, if they are established at least four months before the FDP is submitted for approval, they become "known" information. Once this is done, WHAs must be included in future FDPs before they are submitted for approval. "Known" information is given a special status. Once an element referred to in the OPR is officially made known, it must be included in the FDP as per the regulation.

The purpose of a formal mechanism for introducing "known" information referred to in the OPR is to prevent *ad hoc* adjustments to planning and operations. Without these provisions, the FDP prepared over months of effort would suddenly need to be adjusted or amended to accommodate a new feature. Similarly, previously approved silviculture prescriptions (SPs), harvesting operations, and road construction could be disrupted as a new planning consideration was suddenly interjected without a due process for establishing it.

Intent

The purpose of "known" information is to provide a formal mechanism for introducing specific planning elements identified in the regulation, which require lead time for their introduction in order to minimize disruptions in planning, operations, and costs.

The use of best information available is to ensure sound, comprehensive, and up-to-date planning on the part of the proponent.

It is important to understand the differences between the best information available and "known" information. Best information is not a formal mechanism for introducing new information and does not have elements identified in the regulation and is not subject to a four-month rule. The onus is on the proponent of the plan to acquire and use the best information available in preparing the plan. In the case of "known" information, the onus is on government to provide it to the licensee. The most up-to-date information is not always the best information. For example, a three-year-old stream classification report may be more accurate than a recently completed project.

To assist in understanding what information should go into a plan, district staff and licensees in most districts hold expectation meetings. In these meetings, known planning considerations, best information, and other issues are discussed. To further clarify what information has been used in a plan, the FDP Template has an appendix table identifying the source and dates of the information. Information is also commonly made "known" through a direction letter from the statutory decision-maker to the licensee. (Refer to *District manager guidance* in this guidebook.)

Although there is no legal requirement to incorporate information made "known" after the four-month period, it may be included voluntarily.

2.4 Gating

Prior to changes to the OPR in 1998, each time an FDP was submitted for approval, all of the previously approved cutblocks and roads not developed could be subject to re-review. Among other changes to the legislation, gated approval was introduced, which restricted the re-review of previously approved cutblocks and roads.

Intent

The intent of gating is to give the plan proponent assurance that once a cutblock or road is approved, it receives a different status from a proposed cutblock or road with respect to further review. Once a cutblock or road is approved, the plan proponent has the assurance that further review is limited and investments in field activities can proceed with a minimal risk from agency re-evaluation of the cutblock or road. Under gated approval, cutblocks and roads are given categories indicating the progression of their approval.

Category I cutblock or road

Category I cutblocks or roads that may be included in an FDP are presented for information only. They are not subject to approval and do not have the approval status or informational requirements of the other categories.

Category A cutblock

The other categories for cutblocks are proposed category A and approved category A. Proposed category A cutblocks are shown for review and approval. If the plan is approved, the proposed cutblocks progress to an approved category A status in subsequent plans. Similarly, roads progress from proposed to approved but do not receive category A status.

Note: A proposed category A cutblock or proposed road does not have to start out as category I.

Maintaining approved category A status for a cutblock is contingent upon the information requirements under section 20(1) of the OPR being carried forward without being updated from the last approved FDP in which the cutblock appeared. Should any of the information requirements change under subsection (1), the cutblock should be shown as a proposed category A cutblock for section 18(1)(q) of the OPR.

Elements of gating are further discussed in the following sections.

2.5 Protection for Cutblocks and Roads

Sections 21 and 22 of the OPR protect previously approved cutblocks and roads from further review in subsequent FDP submissions. There are two levels of protection: limited and full.

2.5.1 Limited protection

OPR 21

Category A cutblocks and roads in a previously approved FDP are provided limited protection, if permits have not been issued or the required assessments were not shown as completed in an approved FDP. Limited protection means that the DM or DEO may refuse to approve a subsequently proposed FDP if a category A cutblock or road in the FDP fails to meet the requirements (of *FPC Act* sections 10(1)(d) and 41) in the following manner:

- The cutblock or road is not consistent with a new enactment or higher level plan.
- A wildlife habitat area is established, prohibiting cutblock harvesting and the location, construction, modification, or deactivation of roads.
- A community watershed is designated, and the designation does not allow the cutblock or road as planned.

- The result of a recent catastrophe is that harvesting of the cutblock no longer conserves the forest resources.
- A watershed assessment shows that the cutblock or road cannot be developed as planned.
- The timber harvesting or other operations requiring the road will no longer proceed.

Limited protection applies if these events above occur in the period that is four months before the FDP in effect was submitted for approval until four months before the proposed FDP is submitted for approval.

A further limited protection restriction (that does not have the period rule) applies if a terrain stability field assessment shows that the cutblock cannot be harvested as planned.

Intent

The intent of limited protection is to provide extraordinary circumstances where re-review of a previously approved cutblock or road may occur. The proponent has the assurance that, except for unusual circumstances, re-review will not happen.

2.5.2 Full protection

OPR 22

If a cutting permit for a cutblock has been issued, or if the cutblock has been included with an approved FDP, and if the assessments required by OPR sections 16, 17, and 37 are shown as completed, then the cutblock is provided full protection from further review. Similarly, if a road permit has been issued, or the road has been included in an approved FDP with the assessments required by Forest Road Regulation (FRR) sections 4 and 5 shown as completed, then the road is provided full protection.

Intent

The intent of full protection is to assure the plan proponent that once approval of a cutting authority or road permit occurs, or all the necessary assessments are shown as completed, further investments to the cutblock or road can proceed without risk of re-evaluation of the cutblock or road. Once a cutting permit or road permit has been issued, the licensee has a legal right to harvest the timber.

3 FIELD LEVEL INFORMATION

Understanding the legislation requirements is critical in preparing an FDP. However, as the FDP is more than a paper exercise, it is necessary to have a thorough knowledge of the forest environment. To acquire this knowledge, proper FDP planning begins with sound methodology. In short, begin with a long-term plan and cover as large an area as possible: a drainage, watershed, or landscape unit. Analyze the forest cover, terrain, contour maps, and remote and air photos. Determine potential cutblocks, road locations, headings, and control points for crossing and future development. Conduct aerial and ground reconnaissances. There is no substitute for ground truthing and legwork. Inventory labels on maps may be inaccurate, closed canopies may make interpreting geology difficult from air photos, and smaller streams may not be apparent. Thorough reconnaissance avoids issues and amendments, and is imperative to FDP planning.

3.1 Biodiversity

OPR 18(1)(u), 1(e)(vi)

Biological diversity is a forest resource explicitly included in the definition of forest resources found in the interpretation section of the *Act*. The OPR has been drafted to ensure that the maintenance of biological diversity is a planning consideration. In accordance with OPR section 18(1)(u), the FDP must include the general objectives respecting the target levels of retention for coarse woody debris and wildlife trees. The plan must also show the locations of known forest ecosystem networks (FENs). Forest ecosystem networks reduce habitat fragmentation and maintain natural connectivity across the landscape. FENs are primarily established in a higher level plan. The forest development planner should consult the DM and district staff when there is doubt about accommodating a FEN that is not officially known or established.

If a higher level plan with provisions pertaining to biodiversity applies to an area, then the plan should describe for each proposed cutblock the measures to achieve the HLP. Biodiversity objectives generally address the subjects outlined in section 5 of the Strategic Planning Regulation (see below, SPR 5).

Intent

To describe how biological diversity is being addressed at the landscape level, based upon any direction provided through HLPs, decisions on cutblock size, known old-growth management areas, and forest ecosystem networks, and to provide general objectives to address biological diversity at the stand level through wildlife tree and coarse woody debris retention.

Biodiversity is a complex subject. Preparation of an FDP requires a review and understanding of the *Biodiversity Guidebook*. An overview of landscape level and stand level biodiversity management is given here.

Landscape level biodiversity management must reflect the objectives for a landscape unit, established by the DM and jointly agreed to by the MWLAP designated environment official. Landscape considerations may include:

SPR 5

- seral stage distribution,
- old-growth retention and representation,
- landscape connectivity,
- stand structure and species composition, and
- temporal and spatial distribution of cut-and-leave areas.

Other HLPs may also contain biodiversity objectives.

As landscape units are established throughout the province, biodiversity objectives for these units will follow. The objectives will be based on the biogeoclimatic zone, the natural disturbance type (NDT), and the biodiversity emphasis (low, intermediate, or high). The initial focus of landscape unit planning will be objectives for the retention of old growth (via old-growth management areas [OGMAs]) and wildlife trees. Some strategic land use plans (e.g., Land and Resource Management Plans and regional land use plans) may define additional objectives that can be incorporated into landscape units.

Without established landscape units and landscape unit biodiversity management objectives, plan proponents generally use the low level biodiversity emphasis option. Stand level management objectives for coarse woody debris and wildlife tree retention should be described as general objectives or target levels in the FDP in accordance with the strategies outlined in the *Biodiversity Guidebook*. Stand level issues such as specific volumes, the range of piece sizes for coarse woody debris, map base reserves, and wildlife tree patches are described in the silviculture prescription.

OPR 18(1)(u)

3.2 Wildlife Habitat Management

Wildlife needs vary across the landscape of the FDP depending upon the species, climate, habitat availability, natural disturbances, and historical human activities. The Code provides formal protection of wildlife habitat through the establishment of wildlife habitat areas, old-growth management areas, riparian management areas, ungulate winter ranges, and wildlife habitat features. Informally, much can be accomplished to address wildlife needs through prudent planning. Various sources of information are available for the management of this forest resource. As a starting point, a person preparing an FDP should consult the forest ecosystem specialist in the forest district or MWALP office. It is important for forest

development planners to be aware of any identified wildlife species at risk within their operating area. Under the regulations of the Forest Practices Code, identified wildlife species at risk include provincially red- and blue-listed vertebrates and invertebrates, red-listed plants and plant communities, and selected yellow-listed (regionally important) species.

Intent

The provisions of the legislation provide several mechanisms to account for wildlife management and wildlife values. Selection of the appropriate mechanisms is a planning exercise that depends upon a number of factors, including the needs of wildlife for an area, the forest condition, management objectives, and other factors. Wildlife management strategies and enhancements of wildlife values involve long-term landscape level planning and goal-setting.

The *Landscape Unit Planning Guide* and *Riparian Management Area Guidebook* offer a coarse filter, which protects multiple species. Regionally important species are considered at risk under regulations of the Code when the species are not adequately addressed through the coarse-filter guidelines. The management of individual species at risk is discussed in *Managing Identified Wildlife: Procedures and Measures*. This guidebook outlines fine-filter, individual species management. The forest development planner must be familiar with the managing principles and practices outlined in all three documents. Using the information provided in these documents, the plan proponent should be familiar with and follow the management prescriptions for identified wildlife (including animal species and plant communities) within the area of the plan.

3.2.1 Identified wildlife and wildlife habitat areas

OPR 70

Under section 70 of the OPR, the deputy minister of the Ministry of Water, Land, and Air Protection and the Chief Forester, acting jointly, may:

- establish a wildlife habitat area;
- classify species at risk as identified wildlife if they agree that the species needs to be managed through a higher level plan, wildlife habitat measure, or general wildlife measure;
- establish management practices that apply inside WHAs as general wildlife measures; and
- establish a management practice that applies within a specific ecosystem unit.

The establishment, variation, or cancellation of such orders becomes effective when a notice is published in the BC Gazette.

OPR 18(1)(e)(v) The FDP must indicate the location of known WHAs, unless the DM or DEO make it known that the location of the WHA is not to be included in an operational plan. If the location is not to be shown, then the name of the identified wildlife protected by the WHA should be included in the FDP.

A WHA may, at the FDP stage, prohibit the FDP planner from a cutblock or road location, and require specific measures in the FDP and SP to respect the general wildlife measures for the WHA. For example, a WHA may prevent access within a predetermined distance from a nest or fledging area, or restrict the timing of operations to a season when the site is not in use by the species concerned.

3.2.1.1 Interim measures

Throughout the province, many WHAs are under review for establishment. Interim measures may apply to a WHA proposal accepted by the rare and endangered species (RES) specialist. These measures minimize the effects of forest and range practices on critical habitat, such as nest sites and adjacent areas, while the WHA approval process is ongoing. It is recommended that species general wildlife measures are applied in conjunction with interim measures. Interim measures are not mandatory but are provided for the DM and forest licensee to consider in preparing and evaluating a plan. For more information on interim measures for WHAs, refer to *Identified Wildlife Letter of Transmittal*, Chief Forester, MOF, Deputy Minister, ELP, 15 February 1999; and to *Managing Identified Wildlife: Procedures and Measures Volume 1*.

Http://www.elp.gov.bc.ca/wld/identified/strategy_docs/transmit.htm

3.2.1.2 Limited protection

The limited protection offered by OPR section 21 does not apply to cutblocks and roads if a WHA is established in the area under the plan up to four months before the next FDP is submitted for approval in accordance with the conditions specified in OPR 21(1)(b), unless, before that time, the conditions for full protection under OPR 22 have been met.

3.2.2 Ungulate winter range areas

OPR 69 The Chief Forester and the deputy minister of MWLAP establish ungulate winter range areas. In conjunction with identifying an area, the Chief Forester and deputy minister set the management objectives for these areas, which are critical for the winter survival of an ungulate species.

OPR 1, 18(1)(w), 20(1)(b)(v)

Ungulate winter ranges may also be identified through a higher level plan. The proponent must state the known ungulate winter range objectives for the area under the plan. For each proposed category A cutblock, the measures to achieve the indicated objectives must be stated. Measures should not be ambiguous. For example, avoid placement of new access routes adjacent to key ungulate habitat near or adjacent to ungulate winter range areas.

Any proposed category A cutblocks adjacent to or within an ungulate winter range should be listed and the measures to achieve the ungulate winter range objectives discussed. Map references depicting the cutblock and ungulate winter range area should also be provided.

Note: Ungulate winter ranges that were identified in a wildlife management plan or strategy before October 15, 1998, will cease to be an ungulate winter range on October 15, 2003, unless they are confirmed by the Chief Forester and deputy minister (MWLAP). The DM and designated environment official may establish objectives for these ranges. However, unless the Chief Forester and deputy minister (MWLAP) confirm the management objectives for range areas, these objectives will expire October 15, 2003.

3.2.3 Wildlife habitat features

FPC 51
OPR 20(1)(a)(i)

Wildlife habitat features are described in *FPC Act* section 51 and OPR section 1 as: significant mineral licks or wallows; active nests of eagles, ospreys, and blue herons; and other localized features agreed to by the DM and the designated environment official. A general discussion may be provided within the text of the plan if there are WHFs within the planning area, as well as a commitment to manage these features as they become known, in consultation with MWLAP.

Intent

Established wildlife habitat features must be protected through the planning process (OPR). Unidentified resource features must be protected through operations under Section 51 of the *FPC Act*. Wildlife habitat features are generally not to be disclosed on FDP maps in order to protect the species dependent upon them.

Presentation of FDP Information

FDP Template

Wildlife issues, management, and measures to protect are discussed in the FDP Template under Section 3.5 *Wildlife*. Components of the information are also presented on maps for the FDP. (See *FDP Mapping Requirements*, this guidebook.)

3.3 Range

FPC 51

OPR 20(1)(a)

Range resources for livestock are important in many areas of the province. This is recognized in the legislation governing FDPs. For a cutblock to be proposed for category A approval on an FDP it must show, on the map, the location of all known range developments that may be affected directly or indirectly by the cutblock.

Intent

To show the location of range developments, and to ensure that harvesting and road-building activity is planned in a manner that considers these features and mitigates any adverse impacts on them during these operations.

FPC 10(1)(c)(ii)

The FDP should describe how forest operations would be integrated with range developments and livestock management in the area under the plan to show that the range resource is adequately protected. Range resources are forest resources under the *Act*.[1] The plan must specify measures to protect these resources. If, for example, a range development or natural barrier might be destroyed or rendered inoperable from operations, the FDP should indicate how the development will be replaced or repaired as soon as possible after operations cease. All range tenures for the area under the plan should be identified.

OPR 20(1)(b)(i)

Forest development operations may significantly affect range management on Crown range lands. As a minimum, the following should be identified in the FDP:

- the impact that road and cutblock location, pattern, timing, and sequence could have on traditional livestock travel patterns;
- the impact that harvesting could have on range management under tenure;
- the impact that range activities could have on attaining harvesting objectives;

FPC 10(1)(c)(ii)

- the year and timing of harvest, if timing is critical to range activities; and
- the measures intended to address how the impacts will be mitigated.

Range agreement holders and the plan proponent should work together for the mutual benefit of their operations. The FDP proponent should consult with range agreement holders and district range staff in the preparing the FDP. Agreement holders should be sent relevant parts of the FDP for review. The plan proponent should also review and discuss range use plans with the range agreement holders to understand present and intended range activities.

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[1] Resources and values associated with range are included in the definition "forest resources" under the *Act*.

For example

OPR 20(1)(a)(i)
FPC 10(1)(c)(ii)

A proponent maps all the known range developments in the area under the plan that may affect or be affected by proposed roads and category A cutblocks. Measures to protect range developments are then stated cutblock-by-cutblock, road-by-road, preferably in consultation with the range agreement holders. This will give specific guidance to site level operational plans. Some examples of what might be included are:

Timing

- *Specify the year in which harvesting or road construction will take place.*
- *State that there will be no timber harvesting during grazing season in order to avoid conflicts with grazing schedules.*

Barriers

- *Build a permanent fence to replace a dense stand of timber serving as a natural barrier.*
- *Build a temporary fence and cattle guard to protect a block from cattle grazing after planting.*
- *Ensure that a fence on a cutblock is not breached during harvesting when cattle are grazing in the area.*

Noxious weeds

- *Seed landings and roadsides with a forage mixture to prevent the establishment and spread of noxious weeds and ensure that equipment is weed-free before commencement of harvesting operations on a cutblock or road.*

3.4 Recreation

The Code recognizes the public's interest in forest recreation by requiring FDP maps to disclose recreational facilities and opportunities for the area under the plan. Outdoor recreationalists, hunters, and harvesters of non-timber botanical products are especially interested in this information. In many areas, FDP maps feature the most detailed forest recreational information available. Generally, forest or outdoor recreation attracts significant interest during the public review.

FPC 1, 10(1)(c)(ii)

Recreation resources, values, and features are considered a forest resource in the *FPC Act* and must be adequately managed and conserved. In accordance with section 17 of the *Act*, the FDP must identify recreation features and outline a management strategy commensurate to manage and conserve the recreation or forest resource. The strategy may be developed in consultation with the district recreation officer and other interested parties.

Intent

To identify in FDPs the recreation features across the landscape in or near category A cutblocks, and to describe how harvesting operations will be conducted to protect, maintain, or minimize negative impacts on recreational resources and values.

3.4.1 Recreation features

OPR 20(1)(a)(i)
FPC 10(1)(c)(ii)

The FDP must identify the location of known recreation features in the area under the plan, and specify the measures to be carried out to protect these features. This requirement is for recreation features that may affect or be affected by category A cutblocks or roads. Recreation features include recreation facilities, scenic or wilderness areas, and physical, biological, cultural, or historic features that have recreational value. Some of the features may be known, but their location should not be shown on maps, as in the example below.

"Known" features may be identified in HLPs, or are made "known" by the DM or DEO. The DMs may also clarify which features in the recreation features inventory are considered "known." Other features in the inventory not formally make "known" may still constitute best information available for the plan proponent. Any new features identified in public viewing or agency reviews that do not meet the definition of "known" should also be considered as best information.

For example

Sample format for showing information and strategies to accommodate "known" recreation features in an FDP.

"Known" recreation feature

Cave and karst features are located in the plan area. Cutblocks and roads will be located to avoid known cave entrances; roads will also be located away from caves that have thin ceilings. After timber harvesting is completed, the roads will be deactivated to protect the cave from high public accessibility.

3.4.2 Recreation objectives established in higher level plans

FPC 10(1)(d) Where HLPs exist, determine whether any areas with approved recreation objectives intersect or are adjacent to the proposed operations. Areas that may have recreation objectives (i.e., HLPs) include resource management zones, landscape units, sensitive areas, recreation sites, recreation trails, and interpretative forest sites approved under the Code. HLPs may also include specific management guidance for resource features such as heritage trails or rivers, wilderness areas, caves, and sensitive areas either established for or having a recreation component. If recreation objectives have been legally established in HLPs, the FDP must outline how these objectives will be met. The plan must describe the measures that will be taken to ensure that timber harvesting and road construction operations are consistent with these objectives.

For example

Sample format for showing recreation objective information in an FDP.

Recreation objective established in a higher level plan

A portion of the Hudson's Bay Company Heritage Trail is located in the plan area. The objective for this trail is to ensure that the heritage, recreation, and scenic values of the trail, trail corridor, and trail viewshed are maintained for the enjoyment of residents and visitors. Timber harvesting operations will not be permitted within the 200-m trail corridor except for the two road crossings identified on the map.

3.4.3 Protected areas and wilderness areas

OPR 18(1)(e)(i) Protected areas include national and provincial parks and ecological reserves. These areas contribute to the maintenance of biological diversity, provide habitat for wildlife, and can provide recreation opportunities in the natural setting. To provide context to planning considerations, any known protected areas must be shown on the FDP.

OPR 18(1)(e)(iii) Wilderness areas may be established by Order-in-Council under section 6 of the *Forest Act*. These areas of Crown land within a Provincial Forest must be used for the preservation of wilderness, biological diversity, and other prescribed purposes. Commercial timber harvesting is not to be carried out in a wilderness area. The locations of known wilderness areas are to be indicated in the FDP.

In some areas, other designations exist that address key values but are not considered "protected areas." Where government has formally designated areas, they should be shown on FDPs. Examples include wildlife management areas and heritage rivers.

3.5 Visual Resource Management

Visual Impact Assessment Guidebook

An important planning consideration is how a cutblock or road will appear upon the landscape following development. Visual sensitivity to locating cutblocks and roads under a plan depends on many factors, including size and shape of the cutblock, slope, silvicultural system, past disturbance, and the exposure or frequency of viewing opportunities by the public. Under the Code, areas of visual values can be made known by the DM or through HLPs as scenic areas. Visual resources are to be managed to ensure that the visual integrity of these areas is maintained. The *Visual Impact Assessment Guidebook* gives details on visual resource management and visual impact assessments. The planning sequence and the legislation and regulatory provisions for managing visual resources in forest development planning is provided in Figure 2.

OPR 18(1)(e)(viii)

An FDP must include information on known scenic areas within the area under the plan. This may be accomplished by including an inset map describing the scenic areas under the plan or by delineating the scenic area boundary on the 1:20 000 FDP map. The scenic areas should also be described in the text of the plan.

Visual quality objectives (VQOs) and the measures to meet them must be stated if they are established by the DM or are in HLPs. If no VQOs exist in a known scenic area, the proponent is still obliged to state measures to protect forest resources, which include visual resources.

FPC 10(1)(c)(ii) and (d)

Proposed roads and category A cutblocks, in a known scenic area with established VQOs, will be evaluated using the existing visual condition to determine if additional operations are possible within the scenic area. If VQOs do not exist, there may be recommended VQOs that the DM will consider. Approval of proposed category A cutblocks and roads in known scenic areas will depend on the measures stated to meet VQOs if they exist, or to address visual resource concerns.

Approval of category A cutblocks and roads on an FDP does not imply that VQOs are met. It still must be demonstrated at the SP or road layout and design stage that established VQOs are met, or that the visual resource will be adequately managed and conserved.

Visual impact assessments (VIAs) are required for approved category A cutblocks and roads in known scenic areas with established VQOs. The proponent will have to use the results of VIAs to demonstrate that the proposed harvesting or road operations are consistent with the established VQOs.

OPR 37(1)(a)
FRR 4(7)

It is recommended that the proponent should contact the DM to obtain direction about what level of management is appropriate within scenic areas without VQOs, and what is generally expected in a visual simulation package. See the flowchart in Figure 2 for scenic areas without VQOs.

VIAs, when required, are typically carried out after a category A cutblock or road is approved in the FDP and before an SP or road layout and design is submitted for approval. It makes good business sense to carry out a VIA as early as possible in the planning process, before too much fieldwork is completed. All proposals within the same general planning area and any existing alterations that have not yet achieved visual recovery or effective green-up following disturbance should be part of the same VIA package.

The management of British Columbia's outstanding forest resource is becoming a critical factor in areas of high public use. The FDP should reflect the full range of short- and long-term considerations of visual resource management.

The *Visual Impact Assessment Guidebook* gives numerous suggestions for cutblock and road design at the landscape level, which may be of interest to proponents developing an FDP in a known scenic area. Some of the key points are given below:

- Design developments with future passes/entries in mind to ensure that both VQOs and wood removal can be maintained over the long term.
- Start in less sensitive hollows and work up the hillside when designing the first pass.
- Make sure that general shape, scale, and position of the proposed operations fit the landscape. Natural shapes are generally more compatible with the landscape than geometric shapes.
- Design asymmetric cutblock shapes rather than symmetric ones.

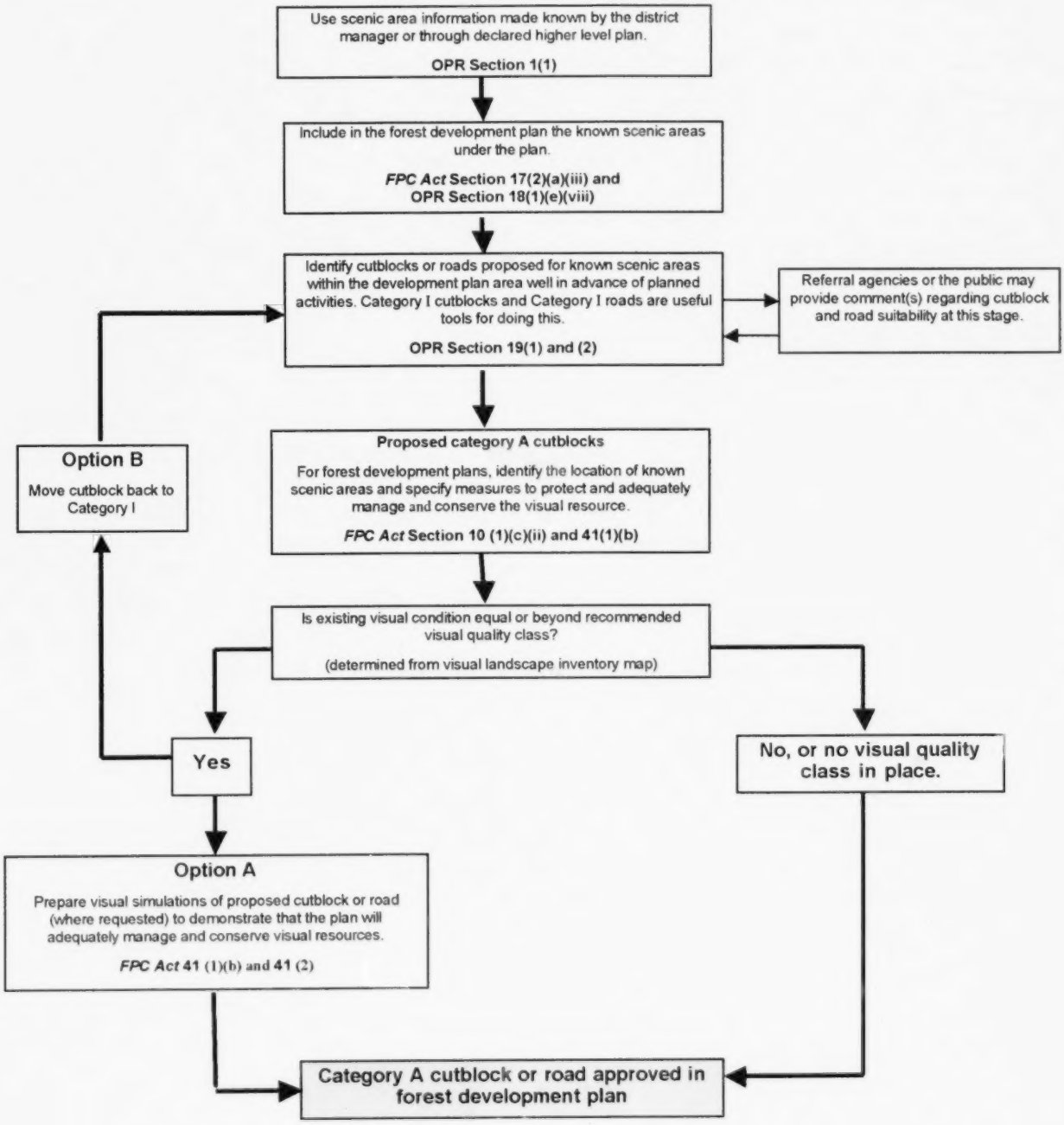

Use scenic area information made known by the district manager or through declared higher level plan.
OPR Section 1(1)
Include in the forest development plan the known scenic areas under the plan.
FPC Act Section 17(2)(a)(iii) and OPR Section 18(1)(e)(viii)
Identify cutblocks or roads proposed for known scenic areas within the development plan area well in advance of planned activities. Category I cutblocks and Category I roads are useful tools for doing this.
OPR Section 19(1) and (2)
Referral agencies or the public may provide comment(s) regarding cutblock and road suitability at this stage.
Option B
Move cutblock back to Category I
Proposed category A cutblocks
For forest development plans, identify the location of known scenic areas and specify measures to protect and adequately manage and conserve the visual resource.
FPC Act Section 10 (1)(c)(ii) and 41(1)(b)
Is existing visual condition equal or beyond recommended visual quality class?
(determined from visual landscape inventory map)
Yes
No, or no visual quality class in place.
Option A
Prepare visual simulations of proposed cutblock or road (where requested) to demonstrate that the plan will adequately manage and conserve visual resources.
FPC Act 41 (1)(b) and 41 (2)
Category A cutblock or road approved in forest development plan

Figure 2: Visual resource management requirements for known scenic areas without established visual quality objectives.

3.5.1 Visual resource management of cutblocks

Ensure that the general shape, scale, and position of the proposal(s) fit the landscape:

- Favour natural over geometric shapes.
- Use the visual cues presented by the landform—the shape of harvest units should reflect the quality of those shapes found in the natural landscape.
- Locate larger openings on lower slopes and decrease the size of the opening as the slope increases.
- Vary opening sizes and spacing between openings to achieve irregular appearance.
- Avoid creating notches or abrupt changes in tree canopy in openings proposed along skylines and ridgelines.
- Distribute openings between visible and non-visible areas, and between steep and gentle slopes within visual sensitivity units.

The recovery rate for visually effective green-up of a new stand varies widely across the province and is a function of the tree and shrub species, moisture retention of the soil, slope, climate, and growth rates. Examine previously logged areas to understand the local recovery rates. These recovery rates are important in determining how well harvesting in visually sensitive areas will be accepted.

3.5.2 Visual resource management of roads

Road locations should make as much use of landform as possible and take advantage of non-visible areas, benches, and vegetative screening wherever possible to reduce impact.

Road lines should blend with the landform by:

- climbing in hollows and dropping on ridgelines;
- not locating roads close to the skyline, and crossing the skyline in hollows;
- using gently curving road lines and locating switchbacks on benches or hollows where possible;
- designing road alignments diagonal to the slope when mid-slope roads cannot be avoided; and
- reducing size of cut-and-fill, and hydroseeding exposed mineral soil.

Use techniques such as end-hauling and controlled blasting to mitigate visual impacts of road construction on steep, visually sensitive slopes.

3.6 Assessments

FPC 17

OPR 26

Section 17 of the *FPC Act* requires assessments to be conducted in accordance with the regulations, in order to prepare an FDP. These assessments provide information about the forest environment, and how operations may be conducted to mitigate impact on the forest resources identified in the area under the plan. Assessments may focus on riparian areas, watershed analysis, terrain, visual landscape, archaeological features, and forest health. Landscape level assessments are done at the FDP stage. Site level assessments are conducted during the SP or road layout and design stages.

Assessments are not considered part of the plan, but must be made available for review if a request is made to the proponent.

The following assessments may be required by the DM before an FDP is made available for review:

OPR 13, 14, 15

- watershed assessment,
- forest health assessment, and/or
- riparian assessment.

OPR 16, 17

If an assessment is required, the FDP must be consistent with its results and recommendations unless a variance from the assessment results is permitted in the OPR.

OPR 20(3)

Terrain stability field assessments (TSFAs) are not required as part of an FDP. However, cutblocks requiring a TSFA under section 16 and 17 of the OPR are not eligible for cutting permit application until the TSFA is completed and statements regarding consistency of the cutblock with the assessment and the Timber Harvesting Practices Regulation (THPR) are included in an approved FDP.

The circumstances in which FDP-related assessments are required are described in OPR sections 13–17, and covered in detail in the *Terrain Stability Assessment* section of this guidebook.

Intent

The intent of conducting these assessments at the FDP stage is to provide a broad understanding of the forest environment relative to forest health, riparian classification, watershed, and terrain assessments. These analyses assist the forest planner and approving authority in understanding the appropriateness of a proposed cutblock or road. Assessments done at the FDP stage focus on the most critical areas; for example, community watersheds, or areas with steep slopes (greater than 60%). In the less critical areas, terrain, riparian, and other assessments are completed at the site level, silviculture prescription stage.

3.7 Watershed Assessments

A watershed assessment is an analytical tool that provides forest planners with current forest cover and water-related information and issues that may exist in a watershed. This landscape level assessment is conducted to develop a better understanding of the hydrological implication of forestry-related activities. Because the Coast and Interior have significant hydrological differences, a guidebook outlining separate procedures for each of these areas has been published.

Watershed assessments must be conducted according to the procedures specified in the *Coastal/Interior Watershed Assessment Procedure Guidebook*, which is a cited guidebook under the Code. Other procedures may be approved by the DM,

OPR 14(2) and, for joint approval areas, the DM and DEO, but such procedures should produce similar results to those intended by the guidebook.

OPR 14(1) To ensure current information for critical watersheds, a watershed assessment must be no more that three years old from the FDP submission date for areas under the plan that are partially or wholly contained within:

- a community watershed, or
- a watershed that has significant downstream fisheries values or licensed domestic water users and significant watershed sensitivity as determined by the DM and DEO, or
- a watershed for which the DM has determined that an assessment is necessary.

Intent

Watershed assessment provisions under the legislation pertain to areas that may have significant water quality concerns and sensitivity. Appropriately, the information must be current for the resource planner to make informed and sound decisions regarding development and its potential impact on a watershed.

For example

A discussion of watershed assessments may be presented under section 3.2 Water *of the FDP Template. This discussion may include a table that outlines for a given drainage the date of the most updated watershed assessment, current and projected equivalent clearcut areas, channel conditions, and other factors affecting water quality.*

OPR 14(4) The DM, and/or DM and DEO for joint approval areas, can grant an exemption to the requirement for a watershed assessment if they are satisfied that the volume of timber proposed for removal will not affect the watershed significantly.

OPR 14(5) The DM can request a new watershed assessment if there has been a significant increase in harvesting and road construction/modification for expedited major salvage or emergency harvesting or if there has been a significant amount of terrain instability since the last assessment.

OPR 18(1)(y) A statement is required that the FDP is consistent with the results and recommendations of the watershed assessment. If the FDP is inconsistent with the watershed assessment, a statement is required explaining the inconsistency and why the FDP should be approved anyway.

Refer to section 3.2 of the Template for an example of how to incorporate this information into the plan.

3.8 Forest Health

Forest health is a dynamic planning consideration that may often require special attention. The plan proponent must be flexible in dealing with changing pest and disease issues that occur in the plan area. The Code legislation provides the mechanisms to monitor, assess, and act on forest health problems as they occur.

Intent

To evaluate and identify landscape level forest health concerns for the area under the plan in order to facilitate early detection and control. Also, at the request of the DM, to conduct a forest health assessment, and provide measures to reduce forest health risks without causing new or significant increased risks to forest resources.

OPR 13(a) As a first step, OPR 13(a) requires licence holders to record and evaluate the occurrence of detected forest health factors causing damage or potentially causing damage to the timber resource. This is determined through landscape level surveys or predictive sampling to identify what pests and diseases are in the area under the plan. Any pests that limit the achievement of a forest management objective in the area under the plan should be discussed in the plan. This may involve detailing historic locations of known pests, mapping current outbreaks, or discussing risks of future outbreaks in areas of susceptible host timber. Abiotic factors such as windthrow should also be discussed.

OPR 13(b) Beyond the recording and evaluation step, the DM may require that the plan proponent conduct a forest health assessment to determine the nature and extent of the forest health factors. This is a systematic analysis directed at high-hazard, susceptible forest ecosystems. The *Forest Health Surveys Guidebook* outlines hazard rating, survey procedures, and strategies to address forest health issues at the landscape (FDP) level and at the stand (SP) level.

OPR 18(1)(t)

Where a forest health assessment discloses risks to forest resources, the FDP must provide measures to reduce the risks that do not cause new risks to the forest resources. This issue is discussed in the FDP Template under section 3 *Measures to Protect Forest Resources*, 3.1 *Timber Forest Health*. The Code and OPR references of risks to forest resources recognize that forest pests affect resources beyond timber. Outbreaks of pests and diseases may also affect wildlife, recreation, and visual attributes of the forest environment.

Code Bulletins 37, 41

Measures to reduce forest health risks will vary with the type of pest or disease, the extent of the damage, and the access to the damaged area. Five guidebooks written to assist in pest management are: *Bark Beetle Management, Dwarf Mistletoe Management, Defoliator Management, Management of Terminal Weevils in British Columbia*, and the *Pine Stem Rust Management Guidebook*. In addition, Code Bulletin 37 – *Legislation Governing Harvesting and Bark Beetle Control* and Code Bulletin 41 – *Operational Planning Considerations for Bark Beetle Management*, outline effective options to control bark beetle outbreaks.

For example

Forest Health

The risks to forest health within the area under this FDP can be broken into three categories: forest pests, pathogens, and abiotic factors.

Issue – insects

The insects within the area under the plan are the mountain pine beetle (Dendroctonus ponderosae), *the Douglas-fir bark beetle* (Dendroctonus pseudotsugae), *the spruce bark beetle* (Dendroctonus rufipennis), *and the balsam bark beetle* (Dendroctonus *sp.*).

The current state of forest pests for the area under the plan is that mountain pine beetle is endemic in most of the area under the plan except for the headwaters of Slow Creek. Douglas-fir bark beetle is currently considered endemic but, because of the epidemic in areas adjacent to the areas under the plan, an active monitoring program is in place. All other forest pests are considered to be endemic.

Management measures – insects

The management and forest practices measures taken to protect the productivity of the forests from losses associated with insects are:

Mountain pine beetle

The management measures for mountain pine beetle will be through a combination of "beetle-proofing" stands, small patch salvaging of infested stems, and, where appropriate, pheromone-baiting programs to limit the spread of active beetle infestations.

Areas in and around Slow Creek will have a pheromone-baiting program. Harvesting will occur with the baiting in those areas identified as having epidemic areas of infestations under Cutting Permit 69.

Douglas-fir bark beetle

The management measures for Douglas-fir bark beetle, will be similar to those employed for the mountain pine beetle, along with trap-tree establishment. During the term of this FDP, trap-trees will be used throughout the area under the plan where it is determined, in conjunction with an MOF forest health office, to be necessary.

Measures to protect – insects

Each year we thoroughly review all forest health issues within our plan area. All beetle activity with the potential to increase the risk of spread is identified and prioritized with an action plan developed to manage the situation. We then review our findings with the MOF, MWLAP, and other licensees to develop a co-ordinated approach to forest health issues.

We will participate in the following generalized action to control or prevent any significant infestation levels of mountain pine beetle and Douglas-fir bark beetle within the area under the plan:

- *detecting through aerial and ground surveys.*
- *harvesting attacked or infested stands.*
- *establishing trap-tree and pheromone-baiting programs.*
- *developing access to susceptible stands.*
- *prioritizing and harvesting susceptible stands.*
- *assessing hazard and risk of susceptible lodgepole pine.*

Issue – pathogens

The major diseases are Armillaria root rot (Armillaria ostayae)*, laminated decays* (*i.e.*, Phellinus weirii)*, white pocket rots* (*i.e.*, Phellinus pinus)*, and brown cubical decay. Plantation pathogens of current concern are mistletoe* (Arceuthobium) *and western gall rust* (Endocronartium harknessii).

The root rot diseases of most concern for the area under the plan are Armillaria and Phellinus. While these pathogens are extensive in their occurrence in the area under the plan, they are primarily found in the Interior Cedar–Hemlock and Interior Douglas-fir biogeoclimatic zones.

Management measures – pathogens

Generally, root rot will be dealt with at the stand level, with the management strategies being:

- *planting resistant or non-susceptible species.*
- *planting mixed species.*
- *planting away from stumps and exposed roots.*
- *creating small patch openings in disease centres.*
- *removing stumps.*

Dwarf mistletoe is a concern for many recently established plantations and it affects form and vigour of the plantation stems. If the presence of dwarf

mistletoe is determined to be of concern by surveys, then partial cutting may be used rather than clearcutting or planting of resistant species around the perimeter of the opening.

Measures to protect – pathogens

Surveys may be done where root rot or mistletoe are suspected to occur. These surveys will determine the extent and severity of the infestation and aid in the development of management strategies. Survey techniques can vary between a cursory walkthrough to a systematic series of plots.

Issue – abiotic forest health

Windthrow and snow-damaged timber are the primary abiotic factors affecting the area under the plan and can have severe implications for forest health if not treated in a timely fashion. In addition to reducing the economic value of the affected timber, the downed timber can serve as brood sites for insects that will subsequently attack the surrounding green standing timber.

Management measures – abiotic forest health

Generally, small areas of abiotically damaged timber (wind, fire, snow) are harvested within one year of being identified if access is not an issue. Larger areas of damaged timber are generally planned, developed, and harvested within a year where access is currently available, and longer than a year where new access is required. Pheromone traps will be considered to reduce ambrosia beetle and other infestations' damage on the dead and down timber.

Measures to protect – abiotic forest health

Aerial surveys focusing on recently harvested cutblocks, with snow-, wind-, and fire-damaged timber will be conducted annually to identify new areas of salvage. Our field staff identifies and reports windthrow and snow-damaged timber it encounters during normal field operations. These two methods of identifying windthrow and snow-damaged timber combined with any reported by the general public and MOF will give direction to our minor salvage operations.

3.8.1 Forest health strategies and measures

Prevention as a planning strategy may involve creating a mosaic of stands and ecosystems that are not as susceptible to large outbreaks, providing access to susceptible drainages, using silvicultural systems that do not exacerbate the problem, and defining pest management units across the landscape. Prevention is a long-term planning exercise.

Suppression and salvage are more immediate strategies. Salvage operations may be planned within the regular FDP, or minor or expedited major salvage may be proposed. The special provisions of the Code that apply to these are discussed in the *Salvage Operations* section of this guidebook.

Any strategy for treating the pest should consider the impacts on other forest resources and give enough detail for ministry staff to critique the management options. The strategy may not create new, or significantly increase, risks to forest resources. The plan should state the intention of the proposed management strategy and the timeframe envisioned for successful completion. Strategies must be reassessed annually as the situation changes from year to year. The most technically correct strategy may not always be selected because other criteria can override technical considerations.

3.9 Terrain Stability Assessment

Code Bulletin 14

AFOP

Sound forest resource management requires the identification and evaluation of terrain hazards at the planning stage. A key focus of the Forest Practices Code has been to minimize slope failures, surface erosion, and landslides associated with harvesting and road-building activities. To reduce these risks, the OPR requires the presentation of terrain information on FDP maps and terrain hazard assessments conducted by qualified professionals for areas determined to have potential terrain instability. The timing of this assessment is discussed further in this section.

In addition to the OPR, the Forest Road Regulation has terrain stability requirements pertaining to forest roads operations, and the Timber Harvesting Practices Regulation outlines restrictive provisions related to terrain and harvesting operations. Other guidebooks and Code bulletins outline the best procedures and practices on this subject. To successfully plan harvesting and road operations and comply with the Code, the forest development planner must understand this information and the timing and methodology of the terrain stability requirements.

Intent

To identify and evaluate areas of potentially unstable terrain in the planning stage in order to minimize slope failures and risks to forest resources during the development and harvesting stages.

3.9.1 FDP requirements

OPR 18(1)(c)

All FDPs must identify areas with potential terrain stability problems. Specifically, OPR section 18(1)(c) requires the following terrain information to be identified:

- areas on terrain stability hazard maps with moderate or high likelihood of landslides;
- if no terrain stability hazard mapping has been done, areas identified on reconnaissance terrain stability maps as having unstable or potentially unstable terrain;
- if no terrain stability hazard or reconnaissance terrain stability mapping has been done, areas with a slope gradient greater than 60%; and
- any areas identified by the DM as having unstable or potentially unstable terrain.

3.9.2 Terrain stability mapping

The terminology associated with terrain stability information can be confusing. As discussed in the *Mapping and Assessing Terrain Stability Guidebook*, terrain hazard maps outline terrain classes such as IV and V—areas of moderate and high likelihood of landslides. Reconnaissance maps identify unstable and potentially unstable terrain and may be used for long-term planning, and for determining operable areas and net downs. Terrain classification must be done by qualified professionals. However, a specialist is not required to identify areas of slopes greater than 60%. This is a mapping exercise with little or no fieldwork. The 60% slope criterion is a recognized threshold beyond which terrain instability may become an issue.

The only symbols required for terrain information FDP maps are:

- IV, V terrain classes — from terrain hazard mapping;
- U – unstable and P – potentially unstable; and
- 60% slope.

Terrain symbols have been limited to reduce the clutter on FDP maps. More detailed information may be requested by the statutory decision-maker for community and sensitive watersheds. For symbols, see FDP Template, map legend.

Note: Although generally presented on maps, terrain stability information may also be presented in cutblock and road information tables. This approach may be taken where ground relief is not significant, and slope instability is not a common problem. As with other requirements, presentation of terrain information should be clarified with the district before preparing a plan.

Terrain stability field assessment

Terrain stability classes are not to be confused with the terrain stability field assessment (TSFA). A TSFA is an on-site evaluation of the terrain (slope, soil, and geology) and the impact of the proposed harvesting and road or bladed trail construction on the terrain stability of the site. A qualified professional must perform a TSFA. The TSFA itself is not part of the FDP.

OPR 16, 17, 37 The timing and requirements for TSFAs fall into three distinct areas:

- within joint approval areas (under OPR section 16 - FDP),
- outside joint approval (under OPR section 17 - FDP), and
- within or outside joint approval areas (required under OPR 37 - SP).

(Refer to Tables 1 and 2 of this section.)

3.9.3 Linkage to cutting authority

FPC 18(1), 19(1) Generally, a cutting authority can be applied for once a cutblock has been included in an approved FDP. However, because cutblocks that require TSFAs under OPR sections 16 and 17 are in sensitive terrain areas, the application of the cutting authority is linked to the completion of the TSFA. Approval of the cutting permit application and issuance of cutting authority (CP) by the DM is also linked to the licensee meeting obligations of the licence agreement and the permitting process.

Intent

The intent of linking critical area terrain stability field assessments (OPR 16, 17) to cutting permits is that TSFAs must be completed within a seasonal window and require the availability of specialized expertise. The legislation enables the FDP process to proceed while the assessment is scheduled or is being completed. Despite approval of the cutblock or road in an FDP, a cutting permit may not be applied for until the assessment results and recommendations are available for review with the FDP. This linkage of the terrain assessment to the cutting authority and the Harvesting Practices Regulation provides checks and balances in the plan approval process for the highest terrain stability risk areas of a plan.

OPR 20(3) For TSFAs required under OPR sections 16 and 17, an FDP proponent may apply for a cutting permit only if an approved FDP identifies the cutblock and that:

- the TSFA is completed, and the FDP contains a statement that the cutblock is consistent with the results and recommendations of the assessment, and

- the cutblock complies with sections 7(2), 8(3), and 8(4), and either sections 7(3) or 8(2) of the Timber Harvesting Practices Regulation (THPR).

"Compliant with sections 7(2), 8(3), and 8(4)" means:

- not harvesting in a community watershed in an area subject to high likelihood of landslides;
- not constructing an excavated/bladed trail in an area outside a community watershed, on areas subject to high likelihood of landslides; and
- not constructing an excavated/bladed trail in or outside of a community watershed, on an area subject to a moderate likelihood of landslides, unless the assessor believes it is possible to do so without increasing the risk of a landslide, and landslide debris being transported into a fish or perennial stream, or of damaging property.

THPR 7(2)
8(3)
8(4)

OPR 7(3)(a)

Further to this:

- the cutblock will not be clearcut if it is in a community watershed on terrain that has a moderate likelihood of landslides, where there is a high risk of debris entering streams, *unless* the TSFA states in the assessor's opinion that clearcutting will not significantly increase the risk of a landslide, and
- if the cutblock is outside a community watershed, on terrain that has a high likelihood of landslides, it will not be clearcut, *unless* the TSFA states that the assessor believes clearcutting is feasible with a low likelihood of landslide debris entering a fish or perennial stream or of damaging property.

OPR 20(3)(c)(ii)

Note: The critical statements that justify clearcutting under these conditions in the TSFA should be reiterated in the FDP. In the FDP Template, clearcutting is acknowledged in the section 4.1 *Harvest Summary* table. Further statements reflecting the conditions and the justification for clearcutting in accordance with the TSFA recommendation should be included in Table 5.2, *FDP Harvesting Variance*.

The OPR gives the forest development planner the flexibility to include a recommendation for clearcutting areas described above, despite a failure to comply with THPR sections 7(3)(a) or 8(2)(a).

- The FDP may contain a statement that conditions for THPR sections 7(3)(a) or 8(2)(a) have not been met, and reasons why the FDP should be approved despite not meeting these conditions.

OPR section 20(3)(c)(ii) should be used only after careful consideration.

The THPR sections 7(3) and 8(2) allow for a variance from the prohibition of clearcutting, provided the TSFA documents state that the assessor believes that clearcutting is feasible based upon the field assessment. These sections also permit an approved plan to supersede a practice rule.

Timing of statements

These terrain stability statements in the FDP stemming from OPR section 20(3) may be submitted as an amendment, or submitted for approval in a subsequent FDP. Code Bulletin 14 outlines these different options. If this information is presented as an amendment to the plan, the proponent should discuss whether it will be a minor or standard amendment with the statutory decision-maker (SDM) and provide the appropriate review period.

OPR 27(2) **Available for review**

The proponent of the plan must, on the request of a person reviewing the plan, make a section 16 or 17 TSFA available to assist the person in the review of the plan.

Table 1: Summary of when a TSFA is required coincident with the FDP when applying for a cutting permit

Type of area	Site characteristics	Section reference
Area of joint approval	The cutblock is identified in the FDP as having: • moderate or high likelihood of landslides • unstable or potentially unstable terrain • slope gradients greater than 60%, or • identified by the district manager (or DEO) as requiring a TSFA.	OPR 16(1)
	Exceptions: TSFA is not required for a cutblock if *all* the following apply: • moderate likelihood of landslides • in the Interior • cable or aerial harvesting • no excavated or bladed trails will be constructed, and • if in a community watershed, partial cutting will be used.	OPR 16(2)(a)
	TSFA is not required for a cutblock if: • an assessment was carried out for locating a road and the assessment covered the area to be harvested.	OPR 16(2)(b)
	TSFA is not required for a cutblock if: • sites have moderate likelihood of landslides or potentially unstable terrain, and • harvesting is for emergency or for expedited major salvage operations.	16(3)
Outside areas of joint approval	The cutblock is identified in the FDP as having: • a high likelihood of landslides • unstable terrain, or • a slope gradient greater than 60%.	OPR 17(1)

Table 2: Summary of when a TSFA is required at the SP stage

Type of area	Site characteristics	Section reference
Areas of joint approval	A TSFA was not required under the FDP because of the reasons in OPR section 16(3).	OPR 37(1)(b)(i)
Outside areas of joint approval	The cutblock has been identified in the FDP as having a: • moderate likelihood of landslides, or • potentially unstable terrain. The DM has identified the cutblock as needing a TSFA.	OPR 37(1)(b)(ii) OPR 37(1)(b)(iii)

3.9.4 Community watershed

OPR 12

In community watersheds, a major consideration is to maintain water quality and quantity. To assist in meeting that objective, a terrain stability hazard map and a soil erosion potential map must be completed for all areas within a community watershed where timber harvesting or road construction is proposed. Surface erosion potential mapping is important as it provides an understanding of the texture and other properties of the surface soil and its susceptibility to erosion. Terrain stability hazard and surface erosion potential mapping must be completed for all community watersheds designated under the *Water Act* where harvesting and road-building operations are proposed in an FDP. For community watersheds designated by the regional manager, these mapping requirements apply on or after the date specified in the designation, or, if no date is specified, five years from the date of designation.

3.10 Riparian Management Areas

OPR 59–64

Riparian areas are often the most biologically diverse and sensitive ecosystems in the forest environment. Among the primary objectives of the Forest Practices Code are the provisions to manage and conserve these fragile, biologically productive areas. Because the FDP is a landscape level plan, riparian requirements centre on setting general objectives that can be used to define the site level practices of the silviculture prescription.

A riparian management area (RMA) consists of a riparian management zone (RMZ) and, where required by regulation, a riparian reserve zone (RRZ), as seen in Figure 3. Harvesting is not permitted in the RRZ, apart from the exceptions listed in THPR section 10. Forest practices in the RMZ should retain important wildlife habitat, reduce the risk of windthrow, retain sufficient vegetation for shade, and maintain natural channel and bank stability.

Riparian management zones adjacent to wetlands and lakes retain key wildlife attributes characteristic of natural riparian ecosystems.

The *Riparian Management Area Guidebook* describes RMAs, riparian assessments, and best management practices in detail. Riparian classification for streams, wetlands, and lakes is covered under Part 8 of the OPR.

Intent

To recognize the sensitivity of the riparian ecosystems, and provide general mapping information and objectives for riparian management areas that will guide planning, development, and on-site practices. Management of riparian areas is critical to other forest resources such as wildlife, fish, range, water, and biological diversity.

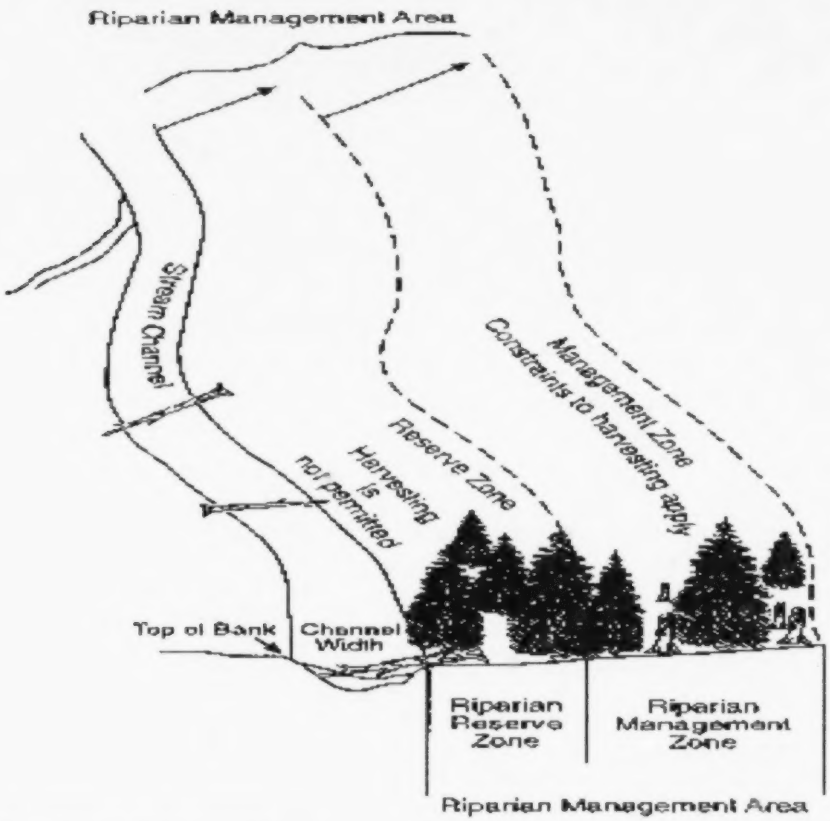


Figure 3: Riparian management area.

3.10.1 Objectives for riparian management

RMA objectives are implemented to minimize or prevent impacts of forest uses on stream channel dynamics, water quality, biodiversity, and ecosystems in and around streams, lakes, and wetlands.

3.10.1.1 Setting and managing general objectives for riparian management zones

OPR 18(1)(v) The general objectives for riparian management zones, including the range of basal area retention by class, are required in all FDPs. The FDP objectives for riparian management should provide sufficient detail to guide preparation of a silviculture prescription. Generally, these objectives should include a description of potential management objectives and a quantitative description for each riparian class of the retention level that will meet the objectives. A retention level parameter is used to give a measurable indicator of the residual stand.

Intent

Basal area retention is an easily determined parameter that provides a coarse indication of disturbance and stand structure following harvesting operations. Because riparian ecosystems' sensitivity and characteristics vary, the general objectives are drafted relative to riparian classes.

Objectives should reflect the goals for managing the riparian areas. Some examples of stated general objectives for RMZs are:

To maintain fish habitat (stream structure, temperature, and water quality):

- retain materials in streambanks for stream stability;
- retain vegetation for stream shading to maintain viable temperatures;
- retain adequate sources of short-term large woody debris; and
- avoid excessive fine organic debris in streams.

To maintain wildlife habitat:

- retain high-value wildlife trees; and
- retain adequate source of short- and long-term coarse woody debris.

In RMAs, windthrow risk is the primary factor affecting the choice of appropriate management measures to meet the objectives for fish and wildlife habitat, and stream channel and bank integrity. The influence of windthrow risk on forest management techniques will vary depending on the windfirmness of the species, the topographic features, and the forest health of the stand in the RRZ.

For example:

- *If the windthrow risk is high and a reserve zone is present, then sufficient retention is called for in the RMZ to buffer and protect the integrity of the reserve zone.*
- *If the windthrow risk is high and no reserve zone is present, then, depending on site-specific factors, a lower retention may be considered, favouring the most windfirm trees.*
- *If the timber present is susceptible to windthrow, then the boundary should be moved to a topographic feature or stand type that is more windfirm (if this type is available).*

Management objectives for each riparian class may reflect the general objectives from the *Riparian Management Area Guidebook* and HLPs, and from those made available by the DM and DEO. The objectives should be clear enough to sufficiently guide silviculture prescriptions. The SPs for individual cutblocks will outline how the management objectives are met on the ground.

In certain areas of the province, district and/or timber supply area riparian classification and management direction should be followed. This information is available from the DM.

Riparian management issues, objectives, measures, and practices are discussed in section 3.4 *Riparian Management* of the FDP Template.

For example

Riparian management

Issues

Riparian management issues involve the need to maintain the integrity of stream channels, wetlands, and lakes in conjunction with forest management activities. The resources affected by riparian management include water, fish, wildlife, and range. These resources are discussed in their respective sections of this plan.

Riparian areas exhibit high concentrations of timber and non-timber values. They are biologically diverse and sensitive to industrial activity. Windthrow of these riparian buffers is a significant problem in some parts of our operations. These sensitive areas require special management objectives.

Riparian management area objectives will be implemented to:

- *minimize the impact of forest and range use on stream channel dynamics, aquatic ecosystems, and water quality of streams, lakes, and wetlands by providing a vegetated buffer and filter between those activities and the riparian area;*
- *minimize the impacts of forest and range use on the diversity, productivity, and sustainability of wildlife habitat and vegetation adjacent to streams,*

lakes, and wetlands with reserve zones or where high wildlife values are present;

- *maintain stream channel stability by protecting streambanks and streambank vegetation and by ensuring that a long-term supply of large wood is available for stream channel processes; and*
- *have the land base contribute to long-term harvest yields within riparian management zones.*

General objectives

The general objectives for riparian management areas under this plan are:

1) For riparian areas with a reserve and a management zone:

- *Minimize the risk of windthrow in the reserve zone.*
- *Maintain wildlife habitat attributes including wildlife trees, large trees, hiding and resting cover, nesting sites, structural diversity, coarse woody debris, food sources characteristic of natural riparian ecosystem, and wildlife tree patches.*

Consider natural disturbance type and develop prescriptions that duplicate natural stand structure as closely as possible.

2) For riparian management areas having only a management zone, and in areas of moderate to high windthrow risk:

- *Retain a 5-m retention zone outside community watersheds, and a 10-m retention zone inside community watersheds of deciduous and non-merchantable coniferous where they exist and remove high-risk windthrow-prone mature trees.*

3) For riparian management areas having only a management zone and in areas of low windthrow risk:

- *Retain the standing timber in the gully and adjust the management boundary to coincide with the edge of the gully.*
- *Make wildlife tree stubs of high-risk, windthrow-prone trees within reach of a fellerbuncher from the edge of the gully.*

Remove high-risk, windthrow-prone trees outside the gully.

Measures to protect

Our silviculture prescriptions will contain site level plans that specify the restricted operation of machinery and/or the retention of trees and riparian vegetation to help minimize the effects of forest management activities on riparian attributes.

Throughout our operations, a windthrow study is being conducted to determine the cause and effect, susceptible areas, mitigating practices, and other aspects of windthrow. Riparian areas are part of this review.

Directional falling will be used where worker safety is not compromised. If a tree is felled across a stream, it will be removed concurrent with operations. Removal of limbs and/or topping may be required to ensure that removal will not damage the streambank integrity. Tops and limbs having the potential to result in debris blockages or alteration of fish habitat will be removed from the stream channel before spring freshet. If a tree is felled across a fish-bearing stream, the portion spanning the creek may be left in place as recruitment for woody debris.

The following variables will be used to select preferred post-harvest attributes with the RMZ:

- *worker safety;*
- *forest health;*
- *retention of coniferous understory, brush, and riparian vegetation;*
- *retention of veteran component, intermediate/co-dominant (larger diameter preferred), and deciduous; and*
- *when managing for basal area retention in the RMZ, the minimization of the risk of non-recoverable windthrow by removing species and individuals in high-risk windthrow situations that would lead to streambank instability and/or insect epidemic.*

Note: *The following basal area ranges outlined in Tables 1–3 provide general guidance for basal area retention adjacent to water bodies. Site-specific variance above and below these ranges is expected. Information requirements should be discussed with a forest district representative.*

Note: Basal area retention examples.

Table 3: Stream basal area retention objectives

Stream classification		Basal area retention strategies				
Community watershed or fish bearing stream		Riparian reserve zone		Riparian management zone		
Stream class	Channel width (m)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
S1	>20	50	100	20	High Medium Low	>70 40–70 0–40
S2	>5 & 20	30	100	20	High Medium Low	>70 40–70 0–40
S3	>1.5 & 5	20	100	20	High Medium Low	>70 40–70 0–40
S4	<1.5	0	N/A	30	High Medium Low	0–20 10–40 30–50
Non-community watershed		Riparian reserve zone		Riparian management zone		
Class	Channel width (m)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
S5	>3	0	N/A	30	High Medium Low	0–20 10–40 30–50
S6	<3	0	N/A	20	High Medium Low	0–10 0–10 0–10

Table 4: Wetland basal area retention objectives

Wetlands classification		Basal area retention strategies				
		Riparian reserve zone		Riparian management zone		
Wetlands class	Area (ha)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
W1	>5	10	100	40	High Medium Low	>50 30–50 0–40
W2	>1 & 5 (very dry subzones)	10	100	20	High Medium Low	>50 30–50 0–40
W3	>1.5 & 5	0	N/A	30	High Medium Low	>50 30–50 0–40
W4	<1.5	0	N/A	30	High Medium Low	0–60 0–60 0–60
W5	<3 (wetlands complex)	10	100	40	High Medium Low	0–25 0–25 0–25

Table 5: Lakeshore basal area retention objectives

Wetlands classification		Basal area retention strategies				
		Riparian reserve zone		Riparian management zone		
Wetlands class	Area (ha)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
W1	>5	10	100	40	High Medium Low	>50 30–50 0–40
W2	>1 & 5 (very dry subzones)	10	100	20	High Medium Low	>50 30–50 0–40
W3	>1.5 & 5	0	N/A	30	High Medium Low	>50 30–50 0–40
W4	<1.5	0	N/A	30	High Medium Low	0–60 0–60 0–60
W5	<3 (wetlands complex)	10	100	40	High Medium Low	0–25 0–25 0–25

Table 3: Stream basal area retention objectives

Stream classification		Basal area retention strategies				
Community watershed or fish bearing stream		Riparian reserve zone		Riparian management zone		
Stream class	Channel width (m)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
S1	>20	50	100	20	High Medium Low	>70 40–70 0–40
S2	>5 & 20	30	100	20	High Medium Low	>70 40–70 0–40
S3	>1.5 & 5	20	100	20	High Medium Low	>70 40–70 0–40
S4	<1.5	0	N/A	30	High Medium Low	70–90 10–40 0–10
Non-community watershed		Riparian reserve zone		Riparian management zone		
Class	Channel width (m)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
S5	>3	0	N/A	30	High Medium Low	0–20 10–40 30–60
S6	<3	0	N/A	20	High Medium Low	0–10 5–10 5–10

Table 4: Wetland basal area retention objectives

Wetlands classification		Basal area retention strategies				
		Riparian reserve zone		Riparian management zone		
Wetlands class	Area (ha)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
W1	>5	10	100	40	High Medium Low	>50 30–50 0–40
W2	>1 & 5 (very dry subzones)	10	100	20	High Medium Low	>50 30–50 0–40
W3	>1.5 & 5	0	N/A	30	High Medium Low	>50 30–50 0–40
W4	<1.5	0	N/A	30	High Medium Low	0–60 0–60 0–60
W5	>3 (wetlands complex)	10	100	40	High Medium Low	0–25 0–25 0–25

Table 5: Lakeshore basal area retention objectives

Wetlands classification		Basal area retention strategies				
		Riparian reserve zone		Riparian management zone		
Wetlands class	Area (ha)	Width (m)	% Basal area retention	Width (m)	Windthrow hazard	% Basal area retention
W1	>5	10	100	40	High Medium Low	>50 30–50 0–40
W2	>1 & 5 (very dry subzones)	10	100	20	High Medium Low	>50 30–50 0–40
W3	>1.5 & 5	0	N/A	30	High Medium Low	>50 30–50 0–40
W4	<1.5	0	N/A	30	High Medium Low	0–60 0–60 0–60
W5	>3 (wetlands complex)	10	100	40	High Medium Low	0–25 0–25 0–25

3.11 Cutblock and Road Information

The OPR identifies specific information requirements for cutblocks and roads on an FDP. The information helps to evaluate the proposed development for an area of a plan relative to the existing development, forest condition, HLPs, and other considerations.

3.11.1 Cutblock information

FPC 10(1)(b)(i)(A)
OPR 18, 20
FPC 17

Cutblock information included in the FDP is at a broad landscape level. Prior to submission of an operational plan, the proponent must conduct assessments and analyze the attained data required by the general planning requirements, section 17 of the *Act*. Section 10(1)(b)(i)(A) of the *FPC Act* requires an FDP to describe, through maps and tables, the size, shape, and location of cutblocks proposed for harvesting. The OPR sections 18 and 20 outline information requirements that basically locate cutblocks and facilitate review by the public and evaluation by the agencies on where harvesting is acceptable, and the objectives and measures that will guide harvesting.

The location of cutblocks and roads and the silvicultural system define the harvesting pattern across the landscape. This pattern is important for environmental and economic reasons. Plan preparation may proceed as follows:

- First, determine which areas are available for harvesting—inoperable areas, non-productive areas, and non-merchantable areas should all be identified first. Additional constraints depend on higher level plan objectives, results of assessments, riparian areas, biodiversity, and other resource needs.
- Second, develop strategies to achieve the management objectives, considering:
  - cutting frequency over time;
  - cutblock pattern across landscape, including range of block sizes; and
  - silvicultural systems and harvesting methods (final decision will be determined on-site).

Development strategies vary over the landscape and involve area-specific zoning.

3.11.1.1 Size

OPR 11

Without higher level plan objectives for larger cutblock design or conditions that must be met for larger cutblocks to be approved, the maximum cutblock size is set by regulation:

- for the Vancouver, Nelson, and Kamloops forest regions, the maximum is 40 ha.
- for the Cariboo, Prince Rupert, and Prince George forest regions, the maximum is 60 ha.

These limits were not established in the Code based on an extensive scientific analysis. Rather, the intent of establishing a maximum cutblock size was to address a general concern for excessively large cutblocks and their impact on scenic, water, some wildlife species, biodiversity and other resources values. Flexibility was provided in the regulation to vary from the standard, based on site conditions, silvicultural systems, and resource management objectives.

OPR 11(3)(a)

The DM and the DEO (for joint approval areas) may refuse to approve an FDP that includes a cutblock that is within the standard maximum for the following reasons:

- hydrological reasons,
- management of wildlife values,
- management of recreation or scenic values, or
- other similar reasons.

Conversely, the DM and DEO (for joint approval areas) may approve an FDP that includes a cutblock larger than the maximum, when:

- damaged timber must be recovered,

OPR 11(3)(b)

- a partial cutting system with greater than 40% retention of the pre-harvest basal area is utilized, or
- the DM, or DM and DEO where applicable, approve a larger cutblock size consistent with the structural characteristics, and temporal and spatial distribution of natural openings for the area.

Refer to the *Biodiversity Guidebook* for recommendations on opening sizes for natural disturbance types. The *Landscape Unit Planning Guide* (February 1999) and Code Bulletin 42 – Green-up, should also be referenced.

Cutblock size is an important planning consideration that directly affects the management of biodiversity, forest resources, operational costs, and forest practices. The proposed cutblocks for the area under the plan must be consistent in size, shape, and location with any higher level plan for the area.

3.11.1.2 Green-up

OPR 68

Green-up is the height and stocking of new regeneration on previously harvested stands contiguous to proposed cutblocks. The level of forest regeneration on harvested blocks is important for visual, wildlife, hydrologic, and recreation values. When the Code was introduced in 1995, green-up provisions were covered in operational planning. In 1998, amendments to the regulations shifted green-up from planning to a harvesting practice consideration (THPR 9).

Code Bulletin 42

Intent

Green-up adjacency is a restrictive harvesting standard designed to prevent or limit progressive clearcutting. It is based on the understanding that a level of recovery is required on recently harvested cutblocks to address visual, wildlife, hydrologic, and recreational values. Partial cutting systems and long-term landscape level planning help to address these restrictions.

THPR 9

In accordance with THPR 9, logging approved category A cutblocks adjacent to previously harvested cutblocks is not permitted until green-up is achieved on the adjacent harvested cutblocks. Note: the green-up status of adjacent cutblocks does not affect FDP approval. It does, however, affect the scheduling of operations.

OPR 18(1)(s)

An FDP must show the location of all cutblocks not yet greened-up that are adjacent to proposed and approved category A cutblocks. Greened-up generally means a recovery height of at least 3 m (unless otherwise specified in an HLP) for the tallest tree in each 0.01-ha sample plot, of commercial species, covering 75% of the net area to be reforested. In addition, the cutblock must be adequately stocked. This is defined as a total stand density of commercially valuable species of 1000 stems per hectare in the Interior and 800 stems per hectare on the Coast. (If there is no SP, then the stocking requirements are specified by the DM.)

OPR 68

THPR 9(2)

Green-up requirements do not apply to:

- a Christmas tree permit,
- a partial cut silvicultural system that retains 40% or more of the pre-harvest basal area, uniformly distributed throughout the cutblock,
- a partial cut silvicultural system with a retention level of less than 40%, approved by the DM prior to harvesting, with the retained trees uniformly distributed or not uniformly distributed, but where the tallest tree in each 0.01-ha plot is at least 3 m in height, and of a commercial species or other species acceptable to the DM,
- situations where the total area of the proposed cutblock and the contiguous harvested areas does not exceed maximum cutblock size,
- an area where the harvesting is necessary to meet visual quality objectives, or
- situations where the resultant opening has been authorized, in writing, by the DM because the cutblock will be consistent with the structural characteristics and temporal/spatial distribution of natural openings.

Refer to sections 67 and 68 of the OPR, THPR 9, and the *Green-up Guidebook* (January 1999) for further details on the requirements and survey procedures for green-up.

The discretion of the DM (and DEO where applicable) to adjust the green-up standards, provided that hydrologic, wildlife, recreation, or scenic values are addressed, is discussed in Code Bulletin 42 – Green-up.

3.11.1.3 Categories of cutblocks

Cutblocks can be presented on FDPs as category I or category A. Category A cutblocks are either proposed or approved. The intent of cutblock categories is discussed below and in section 2.4 *Gating*.

3.11.1.3.1 Category I

OPR 19(1)

Category I cutblocks are for information purposes only and are deemed not part of the plan. The purpose of category I cutblocks is to provide the proponent an opportunity to identify areas of potential future development, invite comments, and get a better understanding of planning concerns. Reviewers may comment on category I cutblocks, but, since they have no approval status, the proponent is not obliged to address these comments. Category I cutblocks have no information requirements beyond identification and do not enable any application for a harvesting authority.

3.11.1.3.2 Proposed category A

OPR 20(1)

A cutblock must meet specific information criteria laid out in the OPR to be proposed as a category A cutblock. The plan must include a map showing the following features if they are directly or indirectly affected by the cutblock:

- "known" resource features other than wildlife habitat features, domestic water supply intakes (unlicensed), and archaeological sites;
- "known" private property; and
- "known" licensed domestic water supply intakes and related water supply infrastructure.

Intent

These features must be included to minimize impacts from the operations, and protect wildlife, private property, water supply infrastructure, and other resource features on the landbase.

OPR 18(1)(q),(s), 15

The FDP must describe for the cutblock, in addition to the information requirements of OPR 18, the following as listed under OPR 20:

- location of any adjacent cutblocks not yet greened-up;
- year of the harvest if timing is critical (e.g., timing and distance restrictions in terms of road construction during the long-eared bat breeding and rearing season);
- location of water used as a helicopter or balloon log drop;
- whether or not the cutblock will be subject to clearcutting;
- any measures to achieve HLPs;
- any measures for the management of known ungulate winter ranges;
- method of harvesting (i.e., cable, aerial, ground based, or combination); and
- riparian classification of streams, wetlands, and lakes as determined by the riparian assessments for areas of joint approval.

20(1), (2)

OPR 70

OPR 20(2), (3)

3.11.1.3.3 Approved category A

OPR 20(1), (r), (s)

16, 17, 37

An approved category A cutblock can be shown on an FDP if it was an approved category A cutblock on the most recently approved FDP, and the information required in OPR section 20(1) (see above) has not changed.

The proponent must also indicate:

- whether the assessments under OPR sections 16, 17, and 37 have been completed and whether a cutting permit has been issued.
- location of any adjacent cutblocks not yet greened-up.

Note: The information regarding the completion of assessments is best presented in a table, as in the FDP Template section 4.1 *Harvest Summary*.

THPR 7(2), (3), 8(2)(a), (3), (4)

If a TSFA is required for a cutblock under OPR sections 16 or 17, the proponent may apply for a cutting permit only if the cutblock is included in an approved FDP as a category A cutblock, with statements that the cutblock:

- is consistent with the TSFA's results and recommendations,
- complies with THPR sections 7(2) and 8(3 and 4),
- complies with THPR section 7(3)(a) if it is inside a community watershed, or
- complies with THPR section 8(2)(a) if it is outside a community watershed.

If the cutblock does not meet the requirements of THPR sections 7(3)(a) or 8(2)(a), then the proponent must state why the requirements have not been met and why the FDP should be approved despite not meeting the requirements.

Note: Detailed explanation of TSFA can be found in the *Terrain Stability Assessment* section of this guidebook.

Previously Approved Category A – Information Changed:

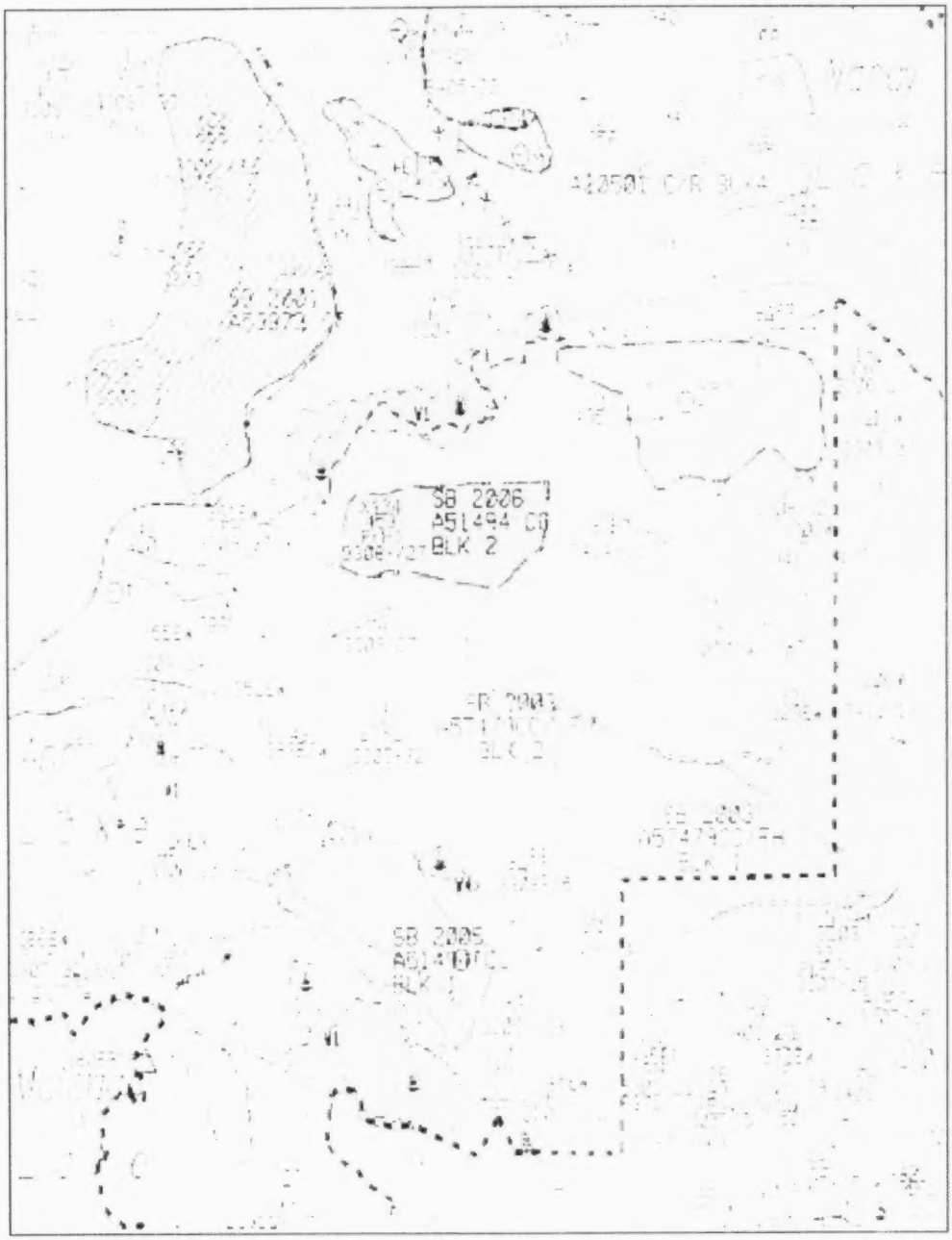
If a previously approved category A cutblock's information as listed under OPR 20(1) has changed from the last approved FDP, the cutblock must become a proposed category A in the next plan. Alternatively, the change may be submitted as an amendment to the existing plan, if done prior to the submission of the next plan. (See *Amendments to an approved FDP in this guidebook.*)

To facilitate an efficient review, cutblocks that were "approved category A" cutblocks and are being submitted as "proposed Category A" in the replacement FDP should be clearly identified on the maps and in the text.

For example

The following page gives an example of cutblock map information.

Map 1: FDP – Cutblock Information



Refer to Appendix A for legend information.

Scale 1:20 000 (NTS)

Map 1: FDP – Cutblock Information

Refer to Appendix A for legend information.

Scale 1:20 000 (NTS)

3.11.2 Roads

Road planning, layout, and construction represent some of the most important activities in forestry. The success of these activities often determines the economic and environmental success of the entire operation. Careful planning of forest roads cannot be emphasized enough. The Code legislation governing forest roads is comprehensive and extends beyond the OPR. This legislation is intended to ensure that forest roads are planned, proposed, and reviewed efficiently and effectively.

OPR 18(1)(h)–(n) The FDP must contain construction, modification, maintenance, and deactivation information for access roads that are required to conduct operations in the area under the plan.

OPR 18(1)(h)(i) The FDP must identify the existing and proposed roads and structures required to meet the short- and long-term forest management goals within the area under the plan.

3.11.2.1 Categories of roads

Unlike cutblocks, roads do not receive category A status. Roads in the FDP may be category I, or proposed or approved for construction to provide access to cutblocks or areas of future development.

3.11.2.1.1 Existing

OPR 18(1)(i) For an existing road that provides access to the area and is required by the *Act* to be maintained by the proponent, the FDP must include the following descriptions, by maps or text:

- its approximate location.
- whether it is a Forest Service road or is under a road permit.
- whether it is intended to be for seasonal use only. Seasonal use refers to the design of the road, not the actual time of use. Roads are to be considered as all-season roads unless listed as winter roads in this section.
- a description or map of how it links up with a public road system, processing plant, or log dump. If the link-up distance is too great to show on a map, the plan proponent should note on the map the distance to the destination point, the name of the destination, and a direction arrow (e.g., 38 km to Highway 10 ◊). Where there is more than one linking route, identify the distance of the preferred route.

Code Bulletin 12

Non-status roads: Some forest roads do not have official status. The FDP should include non-status roads that are part of the road network used to remove timber and for which the licensee has been exempted from requiring a road permit.

Note: For roads that are jointly used by two or more permit holders, each holder should identify on the FDP which roads are required for its own operations.

3.11.2.1.2 Category I

OPR 19

Category I roads are for information purposes only, and are not part of the FDP. Reviewers may make comments about category I roads but the proponent does not have to address them. Category I roads can be used to gauge issues concerning contemplated future development without risking the approval of a currently proposed FDP.

3.11.2.1.3 Proposed road construction and modification

OPR 18(1)(h)

For roads that are proposed Forest Service roads or proposed to be authorized by road permit, the FDP must show or state the approximate location of:

- road construction, including any bridges or major culverts that are part of the road; and
- proposed replacement or addition of a bridge or major culvert.

For roads authorized by a cutting permit or a timber sale licence that does not provide for a cutting permit, the FDP must indicate the approximate location of:

- construction of bridges or major culverts; and
- replacement or addition of a bridge or major culvert.

In addition to the above, the following information must be included in the FDP:

- the year the work is proposed to take place if timing is critical to the management of non-timber resources;

OPR 15

- the riparian classification of streams, wetlands, and lakes, in areas of joint approval, that could directly affect or be affected by a proposed road or replacement of a bridge or major culvert and that are required under OPR section 15; and
- terrain stability hazard and soil erosion potential maps for areas within community watersheds as required by OPR section 12. See the *Terrain Stability Assessment* section in this guidebook.

Note: It is not mandatory to show in-block roads built under a cutting permit.

OPR 18(1)(h)

However, the location of any proposed in block bridges or major culverts is required under a recent amendment to OPR section 18(1)(h). Proposed road construction that must be shown includes roads to be built under a road permit, Forest Service roads, and, for SBFEP FDPs, roads that access timber sale licences.

Proposed in-block roads to be built under a road permit must be shown on the FDP.

3.11.2.2 Assessments on approved roads

OPR 18(1)(i)

The FDP must describe the location of a road that has been included on the most recently approved FDP, and whether the assessments under FRR sections 4 and 5 have been completed.

The suggested symbols to show the proposed and approved road locations on maps are provided in the FDP Template. It is important to distinguish between proposed and approved roads and to state whether the assessments under sections 4 and 5 have been completed for approved roads. It is also important to distinguish existing roads from approved roads. Refer to the sample map at the end of this section and the appendix for the suggested symbols.

FRR 4(5–8)

Under FRR sections 4 and 5, before a proponent who is required to prepare a road layout and design carries out road construction or modification, the proponent may have to carry out the following:

- a terrain stability field assessment (this may be required for deactivation activities as well);
- visual impact assessment—if in a scenic area with established objectives;
- archaeological impact assessment—if the DM deems it necessary; and/or
- riparian assessments required under FRR section 4(6).

Note: This information is presented under section 6 *Access Management* of the FDP Template.

In addition, for community watersheds the proponent must:

OPR 12

- identify fish streams, and
- complete a soil erosion field assessment unless soil erosion potential mapping carried out under OPR section 12 indicates neither high nor very high soil erosion potential.

FRR 5

Information about assessments is best presented in a table. Indicate whether an assessment has been completed or if it is not required for each assessment under FRR sections 4 and 5.

For further details on assessment requirements for roads, refer to the Forest Road Regulation and the *Forest Road Engineering Guidebook*.

3.11.2.3 Proposed bridges

Note: Work on a bridge or major culvert may be subject to timing constraints. There may be a limited window of time when work can take place.

3.11.2.4 Maintenance operations

OPR 18(1)(m)
FPC 63

The OPR requires a list or map notation of the roads that must be maintained by the proponent under *FPC Act* sections 63(1), 63(5), 63(6), or 63(7). Road maintenance is important information for the plan proponent, the public, agencies, and other users of the forest roads. Depicting the information by maps is generally the preferred method for the public as it is readily understood.

3.11.2.5 Deactivation of roads

OPR 18(1)(n)
FPC 64

A proponent who uses a road under the authority of a road permit, cutting permit, timber sale licence, or the government for Forest Service roads must deactivate the road in accordance with the FDP, permit, or timber sale licence. Deactivating a road stabilizes the road prism and maintains or restores the natural drainage. Deactivation also controls erosion and access. The level of deactivation should fall into one of three categories described below, each of which reflects the length of time the road will be inactive. The deactivation measures in each of these levels are aimed at minimizing erosion from the cut slopes, fill slopes, road surfaces, and ditches, while considering the need for access. The tenure holder remains responsible for maintaining the stability of an area that has been temporarily or semi-permanently deactivated.

The three levels of forest road deactivation are:

- temporary,
- semi-permanent, and
- permanent.

FRR 23

Temporary deactivation is used for roads where regular use of the road is to be suspended for less than three years.

FDP Template
FRR 20(5)
OPR 18(1)(n)

Semi-permanent deactivation is used for roads in remote locations or areas where there is a potential for landslides as determined by a TSFA, and where regular use is suspended for one to three years, or where regular use of the road is suspended for more than three years.

Permanent deactivation is used when the road is to be closed permanently.

FDPs must show, on maps and tables, road deactivation information regarding:

- roads that were permanently deactivated during the previous year;
- current temporary or semi-permanently deactivated roads;
- roads to be deactivated in the first three years of the plan and their level of deactivation, specifying the year where timing is critical for non-timber resources; and
- the types of vehicle usage, if any, proposed to be accommodated after deactivation.

The intent of including this information in the FDP is to provide an understanding of the available access to the areas of operation under the plan. This information is important, given the level of public, agency, and licensee use of forest roads.

Deactivation information is usually presented on the maps, using various symbols provided in the legend. However, where roads require more than one level of deactivation (e.g., temporary followed by permanent two years later), then the highest level of deactivation should be shown on the map, with further information presented in a table. Refer to Table 6.1.2, *Interim Road Deactivation*, in the FDP Template for an example of this.

Refer to Appendix A Map Legend, or the FDP Template for the map deactivation symbols.

3.11.2.6 Roads proposed by others

OPR 18(1)(o)

An FDP must indicate the "known" location of roads proposed by other persons. In this context, "other persons" refers to holders of forest tenure agreements. However, the proponent may want to indicate other roads that are proposed as well. For example, if the proponent is aware of a road that is built by mining interests, conveying this information on the maps is beneficial, but not mandatory.

3.11.2.7 Roads for purposes other than harvesting

OPR 18(1)(j)

OPR section 18(1)(j) requires FDP maps to show the forest operations for which road construction or modification is required for operations other than harvesting. Such operations generally pertain to roads built by the MOF for silviculture and protection purposes.

3.11.2.8 Access barriers

OPR 18(1)(p)

FPC 57

The FDP must indicate known locations of temporary or permanent barriers to vehicle access such as tank traps and gates. This is generally shown on a map. In the FDP Template, the map legend provides symbols for proposed and established road barriers. Presenting information about proposed barriers on the FDP maps is useful. However, there is no legal requirement to do so. Approval for access barriers is done outside of the FDP, in a separate agreement with the district. Consequently, approval of an FDP does not constitute approval of a proposed access barrier shown in the plan.

For example

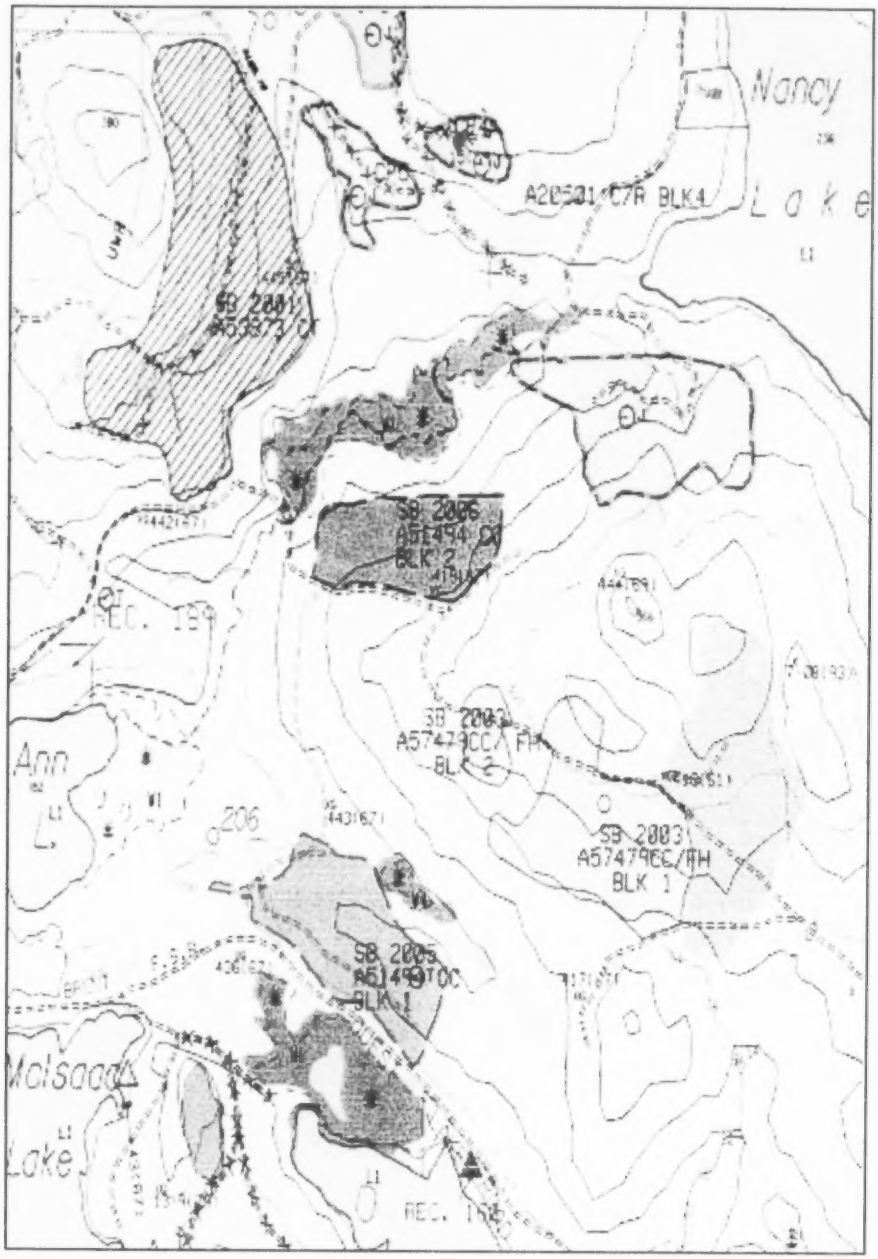
The map on the following page shows an example of road information.

Map 2: FDP – Road Information

Refer to Appendix A for legend information.

Scale 1:20 000

Map 2: FDP – Road Information



Refer to Appendix A for legend information.

Scale 1:20 000

3.13 FDP Mapping Requirements

Some of the most important and readily used information in the FDP is presented on the maps. No other part of the plan receives as much study and attention during the review as the maps. FDP maps are important to the public, reviewing agencies, and the proponent alike. These maps show local and landscape features, development structures, and where operations are proposed.

3.13.1 Content

OPR 18(1)(b), (c)
20(1)(a)

The OPR sometimes permits flexibility in presenting the information by requiring information to be either shown on maps or described in text. Some information, however, must be shown by map only. This information includes:

- forest cover;
- topography, including the locations of streams, wetlands, and lakes required in OPR section 18(1)(b);
- areas required for terrain stability in OPR section 18(1)(c) (see the section *Terrain Stability Assessment* in this guide);
- approximate location of proposed cutblocks and roads.

Also, for proposed category A cutblocks:

- known resource features (other than wildlife habitat features, domestic water supply intakes, and archaeological sites);
- known private property; and
- known licensed domestic water supply intakes and related water supply infrastructure.

OPR 18(1)(e)

Although the OPR does not specifically state which other information must be shown on maps, the proponent should present the information in the clearest format. Most of the information required in OPR sections 18 and 20 should be presented on maps. For example, OPR 18(1)(e) provides a listing for known items including protected areas, forest ecosystem networks, scenic areas, public utilities, and other features that should be presented on maps.

3.13.2 Standards

FDP maps must provide an accurate visual representation of the existing physical features, the approximate location of existing roads, proposed cutblocks and roads, and resource detail that has been collated for the area under the plan. Unless otherwise directed by the DM, all maps should comply with the MOF cartographic standards, as documented in the *FDP Template User Manual.* General use of the Template map symbols increases efficiencies in the preparation, review, and approval of FDPs.

Digital Data Specifications and Standards have been developed as part of the Digital FDP Template project. These standards facilitate digital submission of FDPs. A copy of this document may be obtained from:
http://www.for.gov.bc.ca/ftp/Branches/Information_Systems/external/!publish/Web/FDPTemplate/

An *Integrated Spatial Data Dictionary* (ISDD) has also been developed. The ISDD was built to contain descriptions of the standard spatial features that the MOF uses during ministry business (e.g., forest cover polygon, silviculture opening, and Forest Service road permit). The ISDD web site can be found at:
http://www.for.gov.bc.ca/ftp/Branches/Information_Systems/external/!publish/Web/FDPTemplate/DigitalSubmissionStandards/

3.13.3 Key map

A key or overview map helps people reviewing the plan find the general location and extent of the operations. The key map should show the following:

- existing and proposed operating areas;
- licensee's manufacturing facilities, log dumps, and sort areas;
- main roads and highways;
- cutting permit locations; and
- communities in area.

The scale of the key map depends upon the size of the operations. 1:100 000 to 1:250 000 works well in most circumstances.

An index map is also recommended to explain the sequence and order of the maps.

3.13.4 Plan maps

FDP maps use forest cover maps as a base. Contour information is critical where relief and terrain stability are important operational considerations. To reduce clutter it may be necessary to present cutblock information on forest cover base maps, and road information on contour base maps. The scale of the base map is not specified in legislation. A 1:20 000 scale is often used for the Coast and for mountainous parts of the Interior. Other regions in the Interior use a 1:50 000 scale. FDP maps must be legible to facilitate public and referral agency review.

The requirement for utilizing best information available is critical in preparing FDP maps. The higher the quality of the information, the better operational and management decisions a licensee, reviewers, and approving agencies can make. Significant operational dividends are attained though investments in accurate mapping information.

4 SPECIAL CONTENT REQUIREMENTS

4.1 Salvage Operations

From time to time, it is necessary to perform salvage operations to recover timber losses due to fire, insects, windthrow, or disease. Aerial reconnaissance, field surveys, and probes contribute to the knowledge of the FDP planner in determining if salvage operations are necessary. Provisions of the Code enable accelerated planning, review, and approval in order to salvage timber value and contain pest or disease outbreaks before the situation deteriorates too extensively. These provisions pertain to expedited major salvage, emergency harvesting, and minor salvage.

4.1.1 Expedited major salvage and emergency operations

OPR 1

Expedited major salvage operations are defined in section 1 of the OPR as the harvesting of timber that is diseased, dead, or otherwise damaged or part of a silviculture sanitation treatment, which must be harvested expeditiously to prevent the spread of the infestation, or significant reduction in the value of the timber, and which has a volume that is greater than 2000 m^3 excluding access right-of-way wood.

FPC 42

OPR 16(3)

Emergency operations: The *Act* provides for emergency harvesting operations where it is necessary to harvest without delay where the timber is in danger of being damaged, significantly reduced in value, lost, or destroyed. Where the DM has given effect to or approved an emergency-case FDP or amendment to an FDP, no public review period is necessary. In addition, the DM may approve the silviculture prescription immediately.

In cases where an FDP or an amendment is proposed for emergency harvesting or expedited major salvage in a joint approval area, the TSFA is not required until the silviculture prescription stage. This applies only to joint approval areas with a moderate likelihood of landslides or potentially unstable terrain. Otherwise, the content requirements are the same as all non-salvage FDPs.

OPR 37(5)

Note: For emergency harvesting operations, no assessments are required except for a TSFA if requested by the DM. The TSFA is then completed at the silviculture prescription stage.

OPR 27(4)(b) (6), (7)

Review period: For an FDP or amendment relating to an expedited major salvage operation, the public review period is a minimum of 10 days. The review period is also a minimum of 10 days for an amendment relating to emergency harvesting, unless the DM or DEO think that there is not enough time. If no review period is provided, the proponent must publish a notice in the local newspaper stating:

- that an amendment to the plan has been approved or given effect and there will be no review period;
- the reasons why there was no review period;
- the date on which operations are authorized to begin; and
- the number of days (minimum five days) between the date of publication and the date operations begin.

4.1.2 Minor salvage operations

FPC 10(1)(3)
OPR 3(3)
18(2)

Minor salvage operations are defined in Section 1 of the OPR. Minor salvage is any harvesting of diseased, damaged, or dead timber, or harvesting as part of a silviculture sanitation treatment, or the harvesting of special forest products, in which the volume (excluding right-of-way wood) is less than 2000 m^3. Special forest products are defined in the Special Forest Products Regulation, and reiterated in the glossary of this guidebook.

Intent

The minor salvage provisions of the Code provide an expeditious way of addressing small-scale salvage problems. Because the areas and volumes are small, with minimal potential environmental impact, the content requirements are more limited than standard proposed operations.

Limited Content – minor salvage: The *FPC Act* limits the content requirements for FDPs relating to minor salvage operations. The contents of OPR section 18(1) are not required unless specifically requested in writing by the DM. Minor salvage FDPs are not required to comply with *FPC Act* section 10(1)(b)(i)—maps/schedules or *FPC Act* section 10(1)(c)(i)—silvicultural systems/harvesting methods, but must otherwise comply with *FPC Act* subsection 10(1). Compliance with this section includes:

- information that covers five years unless otherwise allowed by the SDMs in accordance with OPR section 3(3);
- matters required by regulation mentioned above;
- measures that will be carried out to protect forest resources;
- consistency with any higher level plan;
- meeting the requirements of the *Act* in effect four months before the date the plan is submitted; and
- the signature and seal of a professional forester.

Addressing minor salvage in the FDP includes two different approaches:

OPR 37(4)

- minor amendments to the plan, as the minor salvage operations become necessary, and
- a general discussion of minor salvage in the plan, which references a salvage action plan that address the specifics of the problem, without identifying specific salvage locations.

Note: A visual impact assessment is not required for minor or expedited major salvage operations unless requested by the DM in writing. In such cases, salvage of the diseased or damaged timber to recover timber values and prevent further spread of the outbreak takes precedence over the visual consequences of the harvesting.

For example

The following discussion may be presented in the FDP Template – section 5.1 Harvesting Variance.

Minor salvage

The salvage portion of the FDP refers to the harvesting of minor volumes of timber that are in imminent danger of being lost or destroyed or that otherwise should be harvested to control the spread of forest pests. Generally, the timber has been killed by insects, disease, wind, or fire, or has recently been infested by insects and amounts to less than 2000 m^3.

Maximum volumes

The maximum volume of timber for a given minor salvage block under this plan is 2000 m^3. Wherever practical, the timber will be recovered by single-tree selection or small clearcuts to minimize the amount of healthy timber that is concurrently removed or damaged. Applications made to the DM for minor salvage operations will not be advertised. Exemptions from silviculture prescriptions will be requested from the DM for salvage volumes less than 500 m^3 and less than 1 ha in area, if the cutblock is to be clearcut. Salvage applications of 500–2000 m^3 will be covered by individual amendments to a generic silviculture prescription and cutting permit (CP 99). Volumes below 500 m^3 will also be addressed through amendments to this cutting permit.

Priorities

First priority is for the sanitation salvage of trees/stands that were attacked by insects in stands where the attack will spread quickly if left unchecked; for example, Douglas-fir/lodgepole pine stands infested with pine and Douglas-fir bark beetles. The intent is to harvest these trees/stands before the next flight in the insect's life cycle. The second priority in the salvage program is to harvest susceptible stands of windthrown and damaged timber that is or could become a site for insect infestations. The third-priority salvage is to harvest damaged timber where pest control is not as imminent an issue, but before the timber value deteriorates through drying and decay.

Other values

Salvage operations will not result in complete sanitation of woody debris. The utilization standards of the cutting permit will be followed. However, a certain amount of dead standing timber and down timber approximating normal endemic levels will be maintained to contribute to wildlife habitat, stream stability, biological diversity, and soil-building processes.

Notice and review

The salvage situations covered by this portion of the plan cannot be predicted. However, to achieve pest control and utilization objectives, trees must be harvested quickly. For these reasons, individual salvage patches are not shown in the FDP, nor will there be any further notice before harvest. However, a salvage action plan will be prepared and submitted to the DM for approval following completion of bark beetle aerial and ground surveys. Salvage action plans will detail the location, harvest period, and trap-tree or bait locations for salvage blocks known at the time of plan preparation. Resource agencies will be advised and invited to review the plan.

Referral

In addition to the notice and review, any proposals that were not included in the FDP, the salvage action plan, or the action-plan update will be referred to the MWLAP in the following situations:

- where haul road construction is proposed on terrain hazard IV or V lands, or across fish-bearing streams or streams in a community watershed;
- within wildlife habitat areas and ungulate winter ranges identified by MWLAP;
- within the riparian management area of fish-bearing streams, streams in a community watershed, or W1, W2, and W5 wetlands;
- within proposed or approved wildlife tree patches;

- within reserves between cutblocks where wildlife tree patches have not been identified and the salvage could jeopardize the ability to meet the wildlife tree objectives of the Forest Practices Code; and
- in community watersheds where surface soil erosion hazard is high or very high, or where soil stability is a concern.

4.2 Community Watersheds

Community watersheds are defined under S41(8) of the *FPC Act* as the drainage area above the lowest downstream intake or diversion on a stream in which the water is licensed, under the *Water Act*, for human consumption. The term "community watershed" is a term unique to the Code. Over 550 community watersheds are designated in the province, covering over 1.5 million ha. Many Okanagan and Kootenay forest districts have a significant portion of their timber supply within these special management areas. Because the maintenance of water quality is important for these areas, the Forest Practices Code has special planning and practices provisions in the Operational Planning, Forest Road, Timber Harvesting Practices, Silviculture Practices, and Range Practices regulations to address community watershed concerns.

Intent

To provide for the planning and forest development of a community watershed in a manner that maintains water quality and quantity, respects other forest resources, and fulfils higher level plan management objectives established for the area.

In addition to the general FDP requirements, the portion of an FDP covering a community watershed must adhere to the following requirements:

OPR 18(1)(e)(x) **Location of boundaries:** The boundary of the "known" community watershed must be shown on the plan. The boundaries are available as maps or a GIS file through the Water Management Branch of the MWLAP or from regional water management offices (web site at end of this section).

OPR 12 **Terrain mapping:** A terrain hazard map and a soil erosion potential map must be completed by a qualified professional for any community watersheds in the area under the plan. This requirement applies:

FPC 41(8)(a)
41(10)
OPR 18(1)(g)

- On or after June 15, 2000, if the area became a community watershed under section 41(8)(a) of the Code; or
- If the area is designated a community watershed under section 41(10) of the Code, on or after the sooner of:

- the date specified in the designation, or
- five years from the date of the designation.

FDP maps must also identify the location of areas that have high or very high soil erosion potential.

OPR 18(1)(y)

Watershed assessments for a community watershed must be completed within the previous three years, before making an FDP that includes a community watershed available for review. The assessment must be done as per OPR 14, and as described in the *Watershed Assessments* section of this guidebook.

A statement is required that the FDP is consistent with the results and recommendations of the watershed assessment. If the FDP is inconsistent with the watershed assessment, a statement is required explaining the inconsistency and why the FDP should be approved despite the inconsistency.

OPR 18(1)(e)(xi)

Location of intakes: FDP maps *must* depict known community water supply intakes and related water supply infrastructures. If a cutblock is proposed for category A status, then the plan must show on the map known *licensed* domestic water supply intakes and related water supply infrastructure. This requirement applies only if the improvements are within or adjacent to the cutblock and may be directly or indirectly affected by the proposed harvesting activities.

Silvicultural systems: Pursuant to the Timber Harvesting Practices Regulation, harvesting is not permitted in a community watershed on terrain that has a high likelihood of landslides.

THPR 7(2)

Clearcutting is prohibited in an area of a community watershed that has a moderate landslide potential, and a high risk of debris being deposited directly into streams unless:

THPR 7(3)

- the TSFA assessor has reasonable grounds to believe that clearcutting the area will not significantly increase the risk of landslide, or
- the use of clearcutting has been approved in an FDP or SP.

Alternatively, a partial cutting system may be used.

OPR 20(3)

A proposed category A cutblock that does not meet the above THPR requirements can be included in an approved FDP if the terrain instability is shown on the FDP map. However, the cutblock will not be eligible for a cutting permit until:

- a TSFA is completed, and
- a statement is made that the cutblock is consistent with the results and recommendations of the TSFA.

OPR 20(3)(c)(ii) If the TSFA for a cutblock to be clearcut indicates a moderate likelihood of landslides with a high risk of landslide debris entering streams, and the proponent believes that the FDP should be approved anyway, the proponent must state:

- why the cutblock is proposed for clearcutting despite the results and recommendations of the TSFA, and
- why the FDP should still be approved.

FDP Template These statements may be made in the FDP Template in Table 5.2 *Harvesting Variance.*

OPR15, 18(1)(e)(xii), (xiii)

Riparian classification: The riparian class within community watersheds must be shown on all streams, wetlands, and lakes that are in or adjacent to a proposed cutblock, proposed road, or bridge construction. Streams, wetlands, and lakes that must be shown are all those located on reconnaissance fish and fish habitat inventory maps, forest cover maps, and TRIM (terrain resource inventory) maps. Streams are classed as S1, S2, S3, and S4. There are no S5 or S6 streams in community watersheds.

Note: Because timing for operating windows for fish streams may be different than for non–fish-bearing streams, it is important to distinguish between the two. In accordance with OPR section 18(1)(e)(xii), known fish streams should be identified on the FDP maps.

Green-up: For hydrological considerations within community watersheds, the green-up height restriction may be up to 9 m, instead of 3 m. The green-up requirements or recommendations for community watersheds are determined by the watershed assessment. The forest development planner must include the recommendations from a watershed assessment, or a rationale explaining why the recommendations have not been incorporated.

OPR 18(1)(x)

Water quality: The known water quality objectives for a community watershed must be stated in the plan. The objectives may be derived from a higher level plan or specific management plan for the watershed. The forest development plan must ensure that the objectives are not compromised, and that proposed operations fulfil the objectives.

Joint approval: Approval from both the DM and the designated environment official is required for the portion of the area under the plan that is a community watershed. For the purposes of section 41 of the *Act*, community watershed refers to the area above the lowest intake or diversion.

Referral agency and public involvement: Forest development in a community watershed will attract above-average public involvement. Referral agencies will consider potable water the main resource in the community watershed.

Though dated with respect to the current legislation, the *Community Watershed Guidebook (1996)* is a valuable reference for understanding the planning concerns, procedures, and forest practices pertinent to community watersheds.

http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm

On-line information

The MWLAP has an on-line community watershed registry and query system. It may be accessed at http://www.elp.gov.bc.ca/wat/cws/query/cws.htm

5 PUBLIC REVIEW AND COMMENT

OPR 25

OPR 29(1)

Public review and comment is an important aspect of forest development planning. The forest development plan is the only operational plan that must be made available for comment by the public prior to its approval. In accordance with OPR 25, before a proponent submits an FDP or amendment for approval, or a DM gives effect to an FDP or amendment (SBFEP), the licensee or DM for the SBFEP must publish a notice in a local newspaper stating that the FDP is available for public review and comment. The notice must be in a form that is acceptable to the DM. A copy of the FDP or amendment must be submitted to the DM at the same time the notice is published, or at another time agreed to by the DM.

Inherent in the proponent's obligation to invite comment is the public's and interested person's responsibility to review and provide comment on these plans. It is essential that the public's perspective is received. The plan proponents must consider all comments received during the review period. Officials approving the plans also review the comments received.

Intent

To provide opportunities and inform the public of the proposed harvesting operations and receive comments from the public on those planned operations, and to consider the comments in forest development planning.

5.1 Advertising

OPR 26

In accordance with the regulations, advertisements notifying the public of an FDP must be placed in at least one newspaper circulating nearest the area of proposed operations. The use of radio advertisements is also encouraged for remote areas where people do not have access to a newspaper, or to a forest district office. Licensed users such as trappers, guide outfitters, and commercial recreation operators should be notified directly by mail.

In addition to newspaper advertising, notices advising the public of opportunities for plan review may be placed in public locations such as post offices, public libraries, or municipal and regional district offices near the proposed operations. Regional and community television stations are also valuable media for conveying messages regarding the viewing, often at low costs to the plan proponent. It is suggested that the proponent maintain a mailing list of people interested in being notified about upcoming FDP public review sessions.

5.1.1 Advertising format

The newspaper advertisement for FDPs should contain at least the following information (see Figure 4):

- forest tenure number, or Small Business Forest Enterprise Program;
- forest district;
- availability of plan for review and comment;
- geographic location covered by the plan, using locally recognizable names;
- locations, dates, and times of public review opportunities including alternative locations and times; and
- licensee's contact name and phone number for more information.

Public Review and Comment
Morice Forest District Small Business Forest Enterprise Program
Proposed 2002-2007 Forest Development Plan

Notice is hereby given that the Morice Forest District Small Business Forest Enterprise Program (SBFEP) will hold a public review and comment of the proposed 2002-2007 Forest Development Plan (FDP). Our operating areas are situated throughout the Morice Forest District and include the following geographic areas: Wilford, Forgotten Creek, Sandford, Harlington, Robert Creek, Sawyer Creek, Ashburn Lake, Green Lake, and Fitzpatrick Lake.

The plan shows the location of proposed harvesting, road development, road maintenance, and road deactivation activities for the 2002-2007 period. The FDP also includes information on maintenance and protection of other resource values. The plan is made accessible for input and review by the public, licensed users, First Nations, and resource agencies before approval is considered by the district manager and Designated Environmental Official. All higher-level plans, completed operational planning inventories, and approved operational plans within the SBFEP operating areas, will be made available for viewing at this time.

The SBFEP FDP will also incorporate access management planning for Forest Service Roads in the Morice Forest District, which are outside the SBFEP operating areas and not identified in a forest licensee's Forest Development Plan.

The FDP and all available draft silviculture prescriptions will be available for review at the address below, Monday through Friday, from 8:30 a.m. to 4:00 p.m. by appointment only, from February 19, 2002 through April 23, 2002. A representative of the Morice Forest District SBFEP will be available to discuss the proposed plans and receive comments. If any interested parties are unable to review the proposed plan during these times, arrangements can be made to view the plan at a time convenient for them.

Note: Comments must be received in writing by April 20/ 2002, to be incorporated into the planning process.

For more information or to set an appointment, please contact John Smith, R.P.F., SBFEP Planning Forester at:

Morice Forest District
2430 Butler Avenue
Houston, B.C.
V0J 1Z0
Phone (250) 845-6200

Email Forests.MoriceDistrictOffice@gems3.gov.bc.ca

Alternative viewing times are as follows: March 6, 2002 in Morice at the Ramada Courtyard Inn from 1:00 p.m. to 9:00 p.m.; and March 8, 2002 in Lionell at the Ramada Lodge Hotel from 1:00 p.m. to 9:00 p.m.

Figure 4: Example of an FDP public review advertisement.

5.2 Review

5.2.1 Duration

OPR 27(4)

The review period is 60 days from the date of the first publication of the notice in a local newspaper. This period is intended to provide sufficient time for the public, other tenure holders, and interested parties to review the plan. Agency review is also generally conducted during the same period but does not have a legislated duration. The period of review for a plan relating to "expedited major salvage" is a minimum of 10 days.

FPC 42

OPR 27(6)

In the case of emergency operations, pursuant to the *Act* and OPR, no review period may be required. Refer to section 4.1.1. *Expedited major salvage and emergency operations* for details.

5.2.2 Extension of the review period

OPR 27(5)

The 60-day review period may be extended by the DM, or by the DM or the designated environment official for joint approval areas. Extensions of the review period must be made before the expiry of the review period. Requests for an extension should be submitted to the DM.

5.2.3 Location

Reviewing locations should be convenient for the public. Plans for the Small Business Forest Enterprise Program are normally available for viewing at the district office and other convenient locations. Where operations are proposed near communities other than where the licensee/district office is located, plans should be made available near the affected communities (open house or at the library).

The reviewing location should ensure adequate information and space. Staff should be available to address questions and receive comments. Using a public area, such as a community library, for FDP viewing can provide greater public access.

The time period that a proposed FDP is on display should be tailored to specific community needs. A recommended procedure is to hold viewing periods both during and after normal working hours (for example, from noon to 9:00 p.m. daily and, where appropriate, on one day during the weekend).

Presentation

The proponent of the plan should undertake the following steps to help ensure an effective presentation.

- To assist the public in understanding the plan, a representative of the licensee should be available during the review period to answer questions and receive comments.

- All HLPs relevant to the FDP should be available. These plans supply the strategic context in which the plan was developed.
- Relevant information from the MWLAP, such as habitat capability mapping for the area of proposed development, should be available for public review.
- Inventory maps, satellite images, air photos, computer-generated views, and GIS (geographic information system) overlays are beneficial visual aids.
- Information sheets on the management of the more publicized drainages are also beneficial.
- Public input should be encouraged throughout the presentation. A comment sheet for the public to complete should be available. (For example, the FDP Template has an acknowledgement and response Table 7.2, which may be utilized by the public and the proponent of the plan.)

The Forest Practices Branch has prepared a brochure on public review and comment in forest development planning. This document provides some basic information for the public on what a forest development plan is, its content, what may be commented on, and how comments may be submitted. Further information on this document is available at: http://www.for.gov.bc.ca/hfp/hfp.htm

Attendance record

The licensee should record attendance at each public viewing. Members of the public directly affected or interested in the proposed activities in specific areas or on an ongoing basis should be added to a mailing list. E-mail distribution lists for the interested members of the public that have e-mail access may also be utilized.

5.2.4 Consolidating forest development plans

It is more convenient for the public if the review of several different FDPs within a district is co-ordinated into one viewing or open-house event. Two options may be considered:

- The DM may request that several FDPs be consolidated into a single plan for public review. Each licensee will be responsible for the accuracy of its portion of the consolidated plan, maps, and tables.
- Where several FDPs have not been consolidated, the DM may request that licensees jointly display and co-ordinate viewing periods of their individual plans.

Consolidation of FDPs may require co-ordination of notices and advertisements.

Standards

To help facilitate consolidation, a set of data standards based on the FDP Template has been developed by the Information Management Group and the Forest Practices Branch. These *Digital Data Specifications and Standards* are available at: http://www.for.gov.bc.ca/ftp/Branches/Information_Systems/external/!publish/Web/FDPTemplate/DigitalSubmissionStandards/

5.3 Public Comment

To help ensure that public input is considered in plan development, organizers of the public review sessions must clearly explain to the public that comments must be submitted to the plan proponent in writing by a specified date. Generally, this date is within 60 days after the initial public notice inviting comments.

OPR 29(1), (2)

The proponent must consider all comments on proposed roads, modifications, deactivations, and category A cutblocks received during the review period. The proponent can make any revisions deemed appropriate based on these comments. The proponent is not obliged to consider comments on:

- a road that is part of a previously approved FDP; or
- a category A cutblock that was part of the most recently approved FDP, unless the comments relate to a TSFA required under OPR 16 or 17, and the TSFA was not completed for the cutblock before that plan was approved.

The proponent must include in the proposed FDP copies of all written comments received and a summary of all revisions made.

Due to the protection applied to approved roads and cutblocks, comments on proposed roads and cutblocks should receive the closest evaluation. Comments on category I cutblocks and roads, however, can benefit future plans and should be studied. It is suggested that the proponent reply to all comments received to maintain a positive, cordial relationship with the people who provided comments.

Comments in writing: Though the proponent of the plan has an obligation to consider to all comments received, it is best for tracking comments and responses that comments are submitted in writing to the plan proponent

5.4 Referral

OPR 7

The DM may require that a proposed FDP or amendment be referred to a resource agency, or a member of the public who may be affected by the proposed harvesting operations. The opportunity for review by the affected person must be commensurate with the nature and extent of that person's interest in the area under the plan. However, the proponent is encouraged to refer plans to and discuss plans with the affected public in order to maintain a good working relationship.

OPR 27(1)

Referral of the plan may mean that a longer period of review is required by the DM.

Request by member of public

A member of the public interested in or affected by the operations may request an opportunity to review a proposed FDP or amendment to a plan proponent, and the proponent is obliged to provide that opportunity.

Intent

The referral provisions in the OPR ensure that the plan proponent, public, agencies, reviewers, and approvers have an opportunity to receive a broad set of comments in the FDP planning process. In approving the plan under *FPC Act* 41(1)(b), it is important that the DM be assured that all comments have been heard. The DM can direct a referral to obtain comments that may be of particular interest and merit in preparing, reviewing, and approving a plan.

5.4.1 Assessments

OPR 13–17

The person reviewing the plan (resource agencies or public) may make a request to the plan proponent to see completed assessments—sections 13–17 of the OPR. This includes forest health, watershed, terrain stability, and riparian assessments. The proponent must comply with this request, and provide these assessments if they are completed at the time of the request. Assessments should be sent to the requesting party, and made available at a place of business nearest the area under the plan or another location specified by the DM.

OPR 7(4), (5)

5.5 Submission of Plan after Public Review and Comment

OPR 30

Following the public review and comment period, the proponent must submit with the FDP or amendment:

- copies of the notices that were published;
- copies of all written comments received from the public; and
- responses to those written comments and the changes made.

Intent

This OPR provision enables the DM approving the plan to verify that the plan was properly advertised, to review the written comments and concerns of the public and agencies, and to assess the changes that have been made to the plan, in light of the comments that were received. The legislation focuses on written comments because of the difficulties associated with receiving, tracking, and responding to verbal comments.

FDP Template

Written comments and responses are organized in the FDP Template in Appendix 7.2 *Acknowledgement and Response to Comments Received.*

For Example

Issue

After reviewing the FDP, a guide outfitter is concerned about hunting pressure that may occur on moose population as a result of proposed roads in the plan. Once roads are constructed for harvesting, areas that previously were accessible only to horseback riders, quads, and hikers will be accessible by two-wheel-drive vehicles. While this concern applies to all areas under the plan, the specific area of concern is Big Moose Creek.

Response

Barriers will be installed to address access issue in the Big Moose Creek area. These barriers will mitigate hunting pressures on the moose population.

Enhancing public review

The following steps enhance the public review and comment process:

- use of satellite, aerial, orthographic, and standard photos to identify areas,
- use of posters and overview maps to simplify the presentation,
- brochures and summary information sheets pertaining to a particular drainage, or excerpts from the plan (note the brochure on FDP Public Review and Comment),
- general public oral presentations; one-on-one and group meetings,
- expanded open-house sessions to include local groups,
- consultation with interested parties year-round,
- field trips, school presentations, and youth group tours,
- making the FDP available in the local library,
- presenting the information consistently,
- demonstrating a genuine respect for public input,
- writing to the people who commented, explaining how their input was considered, and
- making the plan or information about the plan available on the Internet.

Brochure – FDP Public Review and Comment

5.5.1 Amendments to an approved FDP

Code Bulletin 31

In recognition of the dynamics of the forests environment and operating conditions, the *FPC Act* provides mechanisms to amend operational plans. Once a plan is approved, it is often necessary to amend it in response to changed circumstances that were not foreseeable when the plan was being prepared; for example, to address an infestation of pests or disease, blowdown, or an administrative issue. There are four types of amendments:

- voluntary amendment
- minor amendment
- standard amendment (standard review period), and
- emergency amendment.

The FDP Template does not have an amendment form, unlike the silviculture prescription. However, Appendix 7.5 *Amendment Log* of the Template may be used for tracking amendments.

Intent

The intent of FDP amendment provisions is to accommodate, in a practical way, changes that become necessary as the forest and operating conditions change from the original plan. The amendment provisions provide the plan proponent and the SDMs flexibility to adjust the plan, using the type of amendment that reflects the magnitude of the change and urgency of the situation.

Many districts have amendment procedures and policies that the proponent of the plan should obtain. To expedite the process of amendment approval, a proponent may wish to submit multiple requests. However, specific information must be provided for each amendment, as approval is a unique decision for each amendment.

Amendments must meet the legislation, standards, and higher level plan objectives at the time the amendment is submitted for approval.

In addition to the amendment provisions, the *Act* has provisions regarding expedited major and minor salvage, which have specific content requirements, and abbreviated review periods. This subject is discussed in section 4.1 *Salvage Operations*.

FPC 34

Voluntary amendment

Under section 34 of the *Act*, the holder of an approved FDP may submit a proposed amendment to the DM at any time for approval. The proponent may not amend a plan in a way that is detrimental to another person who

relies on the plan. In making an amendment, the proponent should be cognizant of the expectations and interests of other persons who may be affected by the amendment.

Minor amendment

The SDM or designate may approve a minor amendment under section 43 of the *Act* provided that the amendment :

FPC 43

- is consistent with the regulations and the *FPC Act*;
- does not materially alter the objectives in the FDP; and
- manages and conserves forest resources affected in the plan.

In requesting a minor amendment, the plan proponent should indicate how the amendment meets the criteria for approval as a minor amendment.

Minor amendments may be approved without having been made available for a review and comment period.

Standard amendment

The *FPC Act* does not refer to amendments as "standard" or "regular" amendments. These terms have been used in this discussion to explain variations of amendments. Standard amendments are often referred to as major amendments and are subject to a review and comment period of 60 days. An SDM must approve the amendment if it is consistent with the requirements of sections 40 and 41 of the *Act*, namely,

FPC 42

- it is prepared in accordance with the *Act*, regulations, and standards; and
- the SDM is satisfied that the amendment will adequately manage and conserve the forest resources of the area for which it applies.

Major or standard amendments must be advertised in a local paper. (Refer to section 5.1 *Advertising*.)

Emergency amendment

FPC Act section 42 provides the opportunity for approval of an FDP or an amendment without the plan being made available for review and comment, if it is deemed an emergency by the SDM, and it follows the regulations as specified under section 42 of the *Act*.

FPC 42

Intent

Emergency amendments are intended to harvest without delay timber that is in imminent risk of being damaged, destroyed, or significantly reduced in value.

OPR 27(6) There is no Code definition for an emergency amendment. In accordance with OPR 27(6), no opportunity for review is required if the SDM determines it to be an emergency situation and there is insufficient time to provide a review and comment period of at least 10 days. The DM is not obliged to provide a hearing or reasons, with respect to this decision.

5.6 First Nations

OPR 27(1), (8) As a government agency, the MOF has a legal responsibility to consult with First Nations to ensure that their aboriginal rights are not unduly infringed upon. Under OPR 27(1), the proponent of the FDP has the responsibility to provide a reviewing opportunity to members of the public interested in, or affected by, the operations under the plan. That opportunity is adequate only if the DM, and, for joint approval areas, the DM or the DEO, believe it to be commensurate with the person's interest and rights to use the area under the plan. In much of the province, First Nations people have interests and rights for the same areas also covered under FDPs. Because these plans may cover large areas, the risk of impact on aboriginal rights and cultural heritage sites may be high for some plans.

MOF district staff and major licensees consult with First Nations on FDPs to determine whether aboriginal interests or activities are practiced in the area under the plan. The information gathered through consultation must be considered in preparing the plan.

In preparing an FDP, affected aboriginal groups should be identified and contacted early in the planning process. Information should be collected and maintained regarding traditional use areas, archaeological sites, and First Nations issues and concerns.

The group, rather than individuals, holds aboriginal rights and/or title. The consultation process should deal with authorized representatives (band councils, tribal councils, and hereditary chiefs). However, "grassroots" communication is frequently necessary to determine the full nature and extent of aboriginal rights, and those people directly affected. Meetings, written correspondence, and field trips provide aboriginal groups with useful information regarding the location, timing, and impact of the proposed harvesting activity under the plan. Information such as summary information sheets, slides, maps, and ortho-photos may be useful in such presentations. Though not required by regulation, the plan proponent may discuss with the DM and local bands the placement of traditional First Nations territories on plan maps.

To assist in gathering information and preparing the plan, a contact list should be drafted using (for example) the following format:

First Nation	Address	Contact	Phone #	Fax #	E-mail

For some First Nations, the volume of referrals and detailed nature of FDPs may be an issue. Consequently, more frequent meetings or conversations, and less volume of information per meeting/referral, may be considered.

The MOF, Aboriginal Affairs Branch has prepared two important documents outlining the MOF responsibilities in consultation with First Nations.

1) *Policy 15.1 - Aboriginal Rights and Title* explains the history and background of aboriginal rights.
2) *Policy 15.1 - Aboriginal Rights and Title – Consultation Guidelines* provides guidance to the MOF staff regarding the consultation process with First Nations.

These documents may be obtained at the MOF Policy web site:

http://www.for.gov.bc.ca/tasb/manuals/policy/a-findex.htm#A

Trappers and guides

In addition to aboriginal rights and traditional use of sustenance and culture, many First Nations people hold trapper and guide outfitter licences. Referrals and plan reviews for these people should follow standard procedures in working with other tenure and rights holders.

5.6.1 Archaeological impact assessment

OPR 37

The DM may determine that there are potential risks to archaeological resources posed by approved cutblocks and roads under the plan, and request an archaeological impact assessment. For a cutblock, this assessment must be completed in preparation of the silviculture prescription. If an assessment has been completed before submitting an FDP for review, it must be acknowledged in the FDP as part of the cutblock information as one of the assessments completed under OPR section 37.

For example:

- *In the FDP Template, the archaeological impact assessment is acknowledged in Table 4.1 Harvest Summary, for each cutblock.*

FRR 4, 5

For a road requiring a layout and design, this assessment must be completed before construction or modification can begin. It must be acknowledged in the FDP, if completed, as one of the assessments completed under sections 4 and 5 of the Forest Road Regulation.

For example:

- *In the FDP Template, archaeological impact assessments that required prior construction or modification of roads that require road layout and design, are acknowledged in Tables 6.1.1.a or 6.1.1.b.*

The standards for an archaeological impact assessment are set by the *Heritage Conservation Act* under the Ministry of Small Business, Tourism and Culture. Guidelines for this assessment are available at the following web site:
http://www.qp.gov.bc.ca/statreg/stat/H/96187_011.htm

For example:

- *The FDP would include a table for roads and cutblocks with a field for archeological impact assessments. The proponent can indicate whether the assessment has been completed, or is not required.*

6 FOREST PRACTICES BOARD

The Forest Practices Board of British Columbia is an independent agency that reviews forest planning, practices, and compliance with the Forest Practices Code. Since its inception in 1995, the Board has completed dozens of reviews and audits related to FDPs. On December 1, 2000, the Board concluded a special project review of FDPs. The report from the special project describes improvements that can be made to the forest development planning process; for example:

- The FDP should contain clear and measurable objectives.
- Good working relationships with all stakeholders are important in the planning process.
- Involvement of agencies, other resource users, First Nations, and the public early in the process (before the review period) is beneficial to review and planning.
- Public confusion over FDPs may be reduced through the use of visual tools such as photo-maps, overview maps, oral presentations, and information sheets.
- Use of the FDP MSWord Template is beneficial to improving efficiencies in the preparation and review of FDPs.

These and other recommendations have been incorporated into this guidebook. The full report is available at the Forest Practices Board's web site: http://www.fpb.gov.bc.ca/reports/special/fdp/review-13.htm

APPENDIX A

Changes to legislation from 1998 to 2001

The following section lists changes in the legislation and regulations affecting FDPs from June 1998 to December 2001.

OPR 1

Definitions: added retention system to the list of partial cutting systems.

Retention system means a silvicultural system that:

(a) retains individual trees or groups of trees to maintain structural diversity over the area of a cutblock for at least one rotation, and leaves more than half the total area of the cutblock within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock

OPR 1.1

Manage and conserve

Before giving effect to an operational plan or amendment under *FPC Act* section 40 (SBFEP FDP), the DM must be satisfied that the plan will adequately manage and conserve the forest resources. [Prior to change, the manage and conserve test was implicit through the *Ministry of Forests Act* for SBFEP plans.]

OPR 15(b)(ii)

Stream classification in joint approval areas

Enables the DM, with the agreement of the designated environment official for a stream in a joint approval area that is not a community watershed, a means that is adequate to identify the riparian class of the stream based on available data, without field observations.

OPR 18(1)(c)(v)

Wildlife habitat area requirements for operational plans

Known wildlife habitat areas must not be shown if the DM and DEO make it known that the location is not to be included in operational plans. Only the name of the identified wildlife protected by the WHA is to be included. [The intent of this amendment is to provide similar confidentiality protection to wildlife habitat areas as is currently given to archaeological impact assessments.]

OPR 18(1)(h)

Bridges or major culverts

FDP content, approximate locations of roads, bridges, or major culverts for FSR and road-permit roads, or bridges

	under cutting permits, or a TSL that does not provide cutting permits; construction or replacement.	
OPR 18(1)(m)	Proposed roads within cutblocks to be built under cutting permits do not need to be shown on the FDP maps. The approximate locations of roads that provide access to proposed cutblocks, all proposed bridges, and major culverts inside or outside of the cutblocks are to be shown or described. This makes the regulation consistent with the *FPC Act*.	**Road requirements for FDPs**
18(1)(n)	List or map notation of the roads that must be maintained by the plan proponent. [Change enables listing.]	**Road maintenance**
	Roads that are to be deactivated in the first three years of the plan, and timing of the work, if it was critical to non-timber resources. [Change in wording on timing.]	**Deactivation**

Legislation checklist

FPC Section	Subject	Guidebook Section/Page
1	Definitions for terms in the *FPC Act*.	Higher level plans (page 4)
10(1)(e)	Content of the FDP signed by an RPF.	Signatures (page 11)
17	General planning requirements.	(page 48)
18	Small Business Forest Enterprise Program FDPs.	Forest development plans (page 6)
19	Major licence or woodlot forest development plan.	Forest development plans (page 6)
41	Approval.	Approval (page 8)
51	Previously unknown resource features.	Wildlife habitat features (page 20)
57	Non-industrial Forest Service road use.	Access barriers (page 59)
63	Road maintenance requirements.	Maintenance operations (page 58)
64	Road deactivation requirements.	Deactivation of roads (page 58)

OPR Section	Subject	Guidebook Section/Page
1	Definitions for terms in the OPR.	Best and "Known" Information (page 12)
2	Joint approval.	Joint approval (page 8)
3	Period of an FDP.	Administration (page 10)
	Term of an FDP.	Administration (page 10)
4	Notice of extension for an approved plan.	Plan period and term (page 10)
5	Best information available.	Best and "known" information (page 12)
6	Details provided for site-specific variations within the plan.	Self-explanatory
7(1)	Referral of the plan—DMs request.	Referral (page 76)
7(3)(a)	Copy of comments and revisions.	Referral (page 38)
7(4), (5)	Availability of assessments.	Referral (page 77)
9	Area under the plan.	Area under the plan (page 11)
10	Signatures required.	Signatures (page 11)
11	Maximum cutblock size and variations.	Cutblock information (page 48)
12	Terrain stability mapping community watershed.	Terrain stability assessment (page 40)
13	Forest health assessment requirements.	Forest health (page 29)

OPR Section	Subject	Guidebook Section/Page
14(1)	Watershed assessments.	Watershed assessments (page 30)
14(2)	Watershed assessments must be conducted under accordance with Watershed Assessment Guidebooks and the DM and DEO.	Watershed assessments (page 30)
14(4)	The DM may relieve the proponent from the requirements in 14(1) for specified reasons.	Watershed assessments (page 30)
14(5)	The DM may require the proponent to repeat a watershed assessment for specified reasons.	Watershed assessments (page 31)
15	Riparian assessments requirements for joint approval areas.	Assessments (page 29)
16(1)	Terrain stability field assessment requirements, for joint approval areas.	Terrain stability (page 29)
17	A TSFA must be conducted if there is: • high likelihood of landslides, • unstable terrain, or • slope gradient >60%.	Terrain stability field assessment (page 29)
18	Plan map information requirements.	Cutblock information (page 48)
18(1)(a)	Forest cover map is included.	FDP mapping requirements
18(1)(b)	Topographic map is included complete with streams, wetlands and lakes, if required.	FDP mapping requirements (page 61)
18(1)(c)	Terrain stability hazards are identified.	Terrain stability (page 61)
18(1)(d)	Operability line.	Self-explanatory

OPR Section	Subject	Guidebook Section/Page
18(1)(e)	The following "known" items are required	Content (page 61)
	• protected areas;	
	• areas designated under Part 13 of the *Forest Act*;	
	• wilderness areas;	Wildlife management
	• sensitive areas;	Wildlife management
	• wildlife habitat;	
	• forest ecosystem networks;	
	• old-growth management areas;	Visual resource management
	• scenic areas;	Wildlife management
	• ungulate winter ranges;	
	• community watersheds;	
	• community water supply intakes and related water supply infrastructures;	Community watersheds
	• fish streams;	Community watersheds
	• riparian classes of streams, wetlands, and lakes;	Riparian management
		Appendix A: Map legend
18(1)(f)	Location of public utilities on Crown land (transmission lines, railways, and gas and oil pipelines).	FDP mapping requirements
18(1)(g)	Location of areas within a community watershed with high or very high soil erosion potential.	Community watersheds (page 67)
18(1)(h)(i–iv)	The approximate location of bridges and major culverts proposed to be constructed, replaced, or added.	Roads (page 56)

OPR Section	Subject	Guidebook Section/Page
	For roads, bridges, and major culverts, the year the work will be done, if timing is critical to non-timber resources.	Roads
18(1)(h)	Riparian classification in areas of joint approval that could be affected by proposed roads.	Roads (page 56)
18(1)(i)	Location of roads on the most recently approved FDP and whether assessments under sections 4 and 5 of FRR have been completed.	Roads (page 55)
18(1)(j)	Indicate non-harvesting operations that require road construction or modification.	Roads (page 59)
18(1)(k)	Indicate whether any proposed bridges will be temporary or permanent.	Roads
18(1)(l)	Details for existing roads providing access to the area, and required to be maintained by the proponent: • where it is located approximately; • whether it a Forest Service road or is under road permit; • whether it is intended for seasonal use; • how it links with a public road, processing plant, or log dump.	Roads
18(1)(m)	Roads that must be maintained under *FPC Act* sections 63(1) and 63(5–7).	Roads (page 58)
18(1)(n)	Details for road deactivation: • roads that were permanently deactivated during the previous year; • roads that are currently, temporarily, or semi-permanently deactivated.	Roads (page 58)
18(1)(o)	Location of roads proposed by others.	Roads (page 59)
18 (1)(p)	Locations of permanent and temporary vehicle barriers.	Roads (page 59)

FDP Guidebook

OPR Section	Subject	Guidebook Section/Page
18(1)(q)	Approximate location of proposed category A cutblocks.	Cutblock information (page 52)
18(1)(r)	Location of approved category A cutblocks and whether assessments under OPR16, 17, and 37 have been completed and if a cutting permit has been approved.	Approved category A
18(1)(s)	Location of cutblocks not yet greened-up if they are adjacent to proposed or approved category A cutblocks.	Cutblock information (page 50)
18(1)(t)	If there are any forest health hazards, state measures to be taken to reduce risks.	Forest health (page 32)
18(1)(u)	State target levels of coarse woody debris.	Biodiversity (page 17)
18(1)(v)	Describe the general objectives for RMZs, including range of basal area retention.	Riparian management areas (page 43)
18(1)(w)	State the known objectives for known ungulate winter ranges.	Ungulate winter range areas (page 20)
18(1)(x)	State known water quality objectives for community watersheds.	Community watersheds (page 69)
18(1)(y)	State consistency with any required watershed assessment or explain why the plan should be approved despite inconsistencies.	Community watersheds (page 68)
19	Category I cutblocks and roads.	Category I (page 56)
20(1)	Category A cutblocks.	Cutblock information (page 14)
20(1)(a)	Location of known resource features, private property, and licensed water supply infrastructure, if they may be affected.	Cutblock information (page 21)

OPR Section	Subject	Guidebook Section/Page
20(1)(b)	The plan describes for the cutblock the following:	Cutblock information Proposed Category A (page 52)
(i)	• year of harvest if critical;	
(ii)	• location of log drops;	
(iii)	• whether the cutblock will be clearcut;	
(iv)	• any measures proposed to meet HLPs;	
(v)	• any measures to manage known ungulate winter ranges;	
(vi)	• whether the cutblock will be harvested by cable, aerial, ground, or combination;	
(vii)	• riparian classification of streams, wetlands, and lakes.	
20(2)(a, b)	Approved category A cutblocks on subsequent FDPs, consistent with 20(1).	Category A cutblock
20(3)	Linkage of TSFAs S16, and17 and CP where • the cutblock is included as a category A cutblock in an approved FDP, and • statements are required in subsections 20(3)(a)–(c)(iii).	Linkage to cutting authority (page 52)
21	Limited protection—cutblocks and roads.	Limited protection (page 14)
22	Protection—cutblocks and roads.	Full protection (page 15)
25	Notice of a proposed plan or amendment for public review and comment.	Public review and comment (page 71)
26	Submission of the plan.	Public review and comment (page 71)
27(1)	Plan review period requirements.	First Nations (page 76)

FDP Guidebook

OPR Section	Subject	Guidebook Section/Page
29	Plan review and comment considerations.	Public review and comment (page 71)
30	Submission of review comments.	Submission of plan after public review and comment (page 77)
68	Green-up adjacency.	Green-up (page 49)
69	Known ungulate winter ranges.	Ungulate winter ranges (page 19)
70	Identified wildlife and general wildlife measures.	Identified wildlife and wildlife habitat areas (page 18)

SPR Section	Subject	Guidebook Section/Page
5	Landscape unit objectives.	Biodiversity (page 17)

THPR Section	Subject	Guidebook Section/Page
7	Requirements for harvesting within community watersheds.	Linkage to cutting authority (page 38)
8	Harvesting and assessment requirements on potentially unstable terrain.	Linkage to cutting authority (page 38)
9	Rules for harvesting adjacent to a previously harvested cutblock.	Green-up (page 50)

FRR Section	Subject	Guidebook Section/Page
4, 5	Full protection for roads given completion of assessments.	Full protection (page 15)
4(5–8)	Assessments under the FRR that are acknowledged in an FDP.	Assessments on approved roads (page 57)
5	Soil erosion assessments in community watersheds for roads.	Assessments on approved roads (page 57)

Map Legend

Cutblock Legend Information

Cutblock Status:

	Information	Proposed	Approved
Category A Cutblock			
Category I Cutblock			
Salvage Cutblock			
TSL Cutting Permit			
Partial cut silviculture systems			
Commercially thinned			
Adjacent Licensee Cutblock		SBD	SBD

Cutblock Label:

Company name (abbr.)/year of harvest (if critical)	SBD 2001
Cutting permit or license #/cutblock number	A12345 Blk 1

Forest Cover:

Harvested and Not Satisfactorily Restocked (NSR)	
Satisfactorily Restocked (SR) & not Greened-up	
Satisfactorily Restocked and Greened-up	
Forest cover (timber typeline)	
Forest type	722 HF(C) 9415 – 12

Management Areas:

Environmentally Sensitive –Wildlife (EW)	
Forest Ecosystem Network (FEN) approved	FEN
Indian Reservations	IR
Legal Lot	
Management Area label	MANAGEMENT A
Old Growth Management Area	OGMA
Operability line	OP
Private land	Private
Ungulate Winter Range	UWR

Wilderness areas WA

Wildlife habitat areas WHA

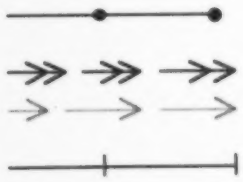
Public Utilities:

Transmission Lines

Pipeline (Oil or Gas)

Pipeline (Water)/Ditch flume

Railway



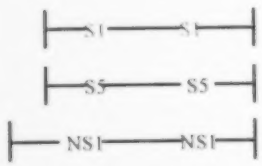
Streams & Wetlands:

Riparian Stream Class

Riparian stream class S1 – S4 FISH

Riparian stream class S5 – S6 NO FISH

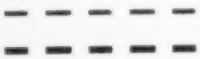
Community watershed class S1 – S4 NO FISH



Fish Habitat inventory map data is based on Interpreted (computer generated slope gradient <20% fish bearing streams) or Department of Fisheries fish escapement records.

Fish habitat invent. unclassified fish stream

Fish habitat invent. unclassified no fish stream



Unclassified streams are derived from TRIM and/ or MOF Forest Cover Maps water features that are uninterpreted.

Unclassified streams –indefinite

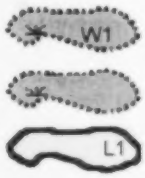
-definite

Rivers/Lakes/Ocean

Riparian wetlands class W1 – W5

Riparian wetlands – unclassified

Riparian lake class L1 – L4



Road Legend Information

Streams & Wetlands:

TRIM and/or MOF Forest Cover Maps are used as the base maps for hydrology for streams and wetlands. Riparian Stream class are derived from detailed field sampling.

Riparian Stream Class

Riparian stream class S1 – S4 FISH

Riparian stream class S5 – S6 NO FISH

Community watershed class S1 – S4 NO FISH

Fish Habitat inventory map data is based on Interpreted (computer generated slope gradient <20% fish bearing streams) or Department of Fisheries fish escapement records.

invent. unclassified no fish stream

Fish habitat invent. unclassified fish stream

Fish habitat invent. unclassified no fish stream

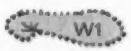
Unclassified streams are derived from TRIM and/ or MOF Forest Cover Maps water features that are uninterpreted.

Unclassified streams –indefinite

-definite

Rivers/Lakes/Ocean

Riparian wetlands class W1 – W5



Riparian wetlands – unclassified

Riparian lake class L1 – L4

Access Management:

Bridge –existing temp. & perm.

Bridge –proposed temp. & perm.

Bridge and Culvert station number

Culverts only equal to & >2000 mm

Culvert -existing temp. & perm.

Culvert –proposed temp. & perm.

Highway

Secondary Road –Public

Road

Trail

Road label — SAYWARD MAINLINE

Seasonal road label — WINTER ROAD

Road barrier- temporary & permanent

Road barrier- proposed temp. & perm.

Road Category I –information

Road construction/modification-proposed

Previously approved

Road Deactivation:

Final deactivation status is the proposed highest level in first three years of the plan.

Road –Temporary deactivation

Road –Temp. deactivation proposed

Road – Semi-permanent deactivation

Road – Semi-p. deactivation proposed

Road –Previous & permanent deactivation

Road –Permanent deactivation proposed

Forest Cover:

Contour Index (definite) & elevation –TRIM — 100

Contour Index intermediate (indefinite)-TRIM

Contour interval 20 metre

APPENDIX B

Glossary

Adequately stocked: A total stand density of commercially valuable species of not less than 800 stems per hectare on the Coast and 1000 stems per hectare in the Interior that are at least 1.3 m in height.

Adjacent: An area contiguous to, or in close proximity to:

a. a road or proposed road

b. a cutblock

c. an area under a stand management prescription that, due to its location, could directly affect, or be affected by a forest practice carried out within the area of the road, cutblock, or prescription.

Archaeological site: A location that contains physical evidence of past human activity that derives its primary documentary and interpretative information through archaeological research techniques. These resources are generally associated with both the pre-contact and post-contact periods in British Columbia. These resources do not necessarily hold direct associations with living communities.

Basal area: The area of the cross-section of tree stems near their base, generally at breast height and including bark.

Bladed trail: A constructed trail that has a width greater than 1.5 m and a mineral soil cutbank height greater than 30 cm.

Deactivation: Measures taken to stabilize roads and logging trails during periods of inactivity, including controlling drainage, removing sidecast where necessary, and re-establishing vegetation for permanent deactivation.

Designated area: An identifiable geographic unit of the forest land base that requires a specific combination of forest practices to adequately protect important resource values.

Designated environment official: A person employed in the MWLAP who is designated by name or title to be a designated environment official by the minister of that ministry for the purpose of a provision of the *FPC Act* or the regulations that is set out in the designation.

Development: The advancement of the management and use of natural resources to satisfy human needs and improve the quality of human life. For development to be sustainable it must take account of social, ecological, and economic factors of the living and non-living resource base, and of the long- and short-term advantages and disadvantages of alternative actions.

Development objectives: The short-term (often five-year) planning objectives for a specific management area.

District manager: The manager of a Forest Service district office, with responsibilities as outlined in the *Forest Act, Ministry of Forests Act,* and *Range Act.*

Excavated trail: A constructed trail that has a width greater than 1.5 m and a mineral soil cutbank height greater than 30 cm.

Expedited major salvage operation: Any harvest over 2000 m^3 that is part of a sanitation treatment or is for dead, damaged, or pest-infested timber, which must be expedited to prevent the spread of insects or significant reduction in timber value.

Forest development plan: An operational plan guided by the principles of integrated resource management (the consideration of timber and non-timber values), which details the logistics of timber development over a period of usually five years. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed.

Forest ecosystem network (FEN): A planned landscape zone that serves to maintain or restore the natural connectivity within a landscape unit. A forest ecosystem network consists of a variety of fully protected areas, sensitive areas, classified areas, and old-growth management areas.

Forest health factor: Biotic and abiotic influences on the forest that are usually naturally occurring components of forest ecosystems. Biotic influences include fungi, insects, plants, animals, bacteria, and nematodes. Abiotic influences include frost, snow, fire, wind, sun, drought, nutrients, and human-caused injury.

Forest resources: A defined term in the *FPC Act* meaning resources and values associated with forests and range, including (without limitation) timber, water, wildlife, fisheries, recreation, botanical forest products, forage, and biological diversity.

Greened-up: The recovery of a newly regenerated stand on a previously harvested cutblock to address wildlife, scenic, recreation, or hydrologic concerns. Recovery is generally initiated when the tallest tree per 0.01-ha sample plot is 3 m or greater, with stocking as specified in S68 OPR. For further explanation, refer to the green-up discussion in this guidebook.

In-block road: A road built within the boundaries of a cutblock that does not provide access to other cutblocks at the time of its construction.

Landscape level: A watershed, or series of interacting watersheds or other natural biophysical (ecological) units, within the larger Land and Resource Management Planning areas. This term is used for conservation planning and is not associated with visual landscape management and viewscape management.

Landscape unit: For the Forest Practices Code, landscape units are planning areas delineated by topographic or geographic features. Typically, they cover a watershed or series of watersheds, and range in size from 5000 to 100 000 ha.

Major culvert: A stream culvert having a pipe diameter of 2000 mm or greater, or a maximum design discharge of 6 m^3/sec or greater.

Minor salvage operation: Any harvest less than 2000 m^3 (excluding volume from road right-of-way) that is part of a sanitation treatment or is for dead, damaged, or pest-infested timber (OPR 1), or special forest products.

Operability line: A line drawn on a map to differentiate between areas that are operable and inoperable, given *status quo* harvesting and reforestation technology. Inoperable areas are not economically viable to harvest without seriously impairing the site or other resource values. The operability line is used to determine the operable land base in long-run, sustained yield calculations.

Operational plan: The *FPC Act* states that, within the context of area-specific management guidelines, operational plans detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include FDPs, logging plans, range use plans, silviculture prescriptions, and stand management prescriptions.

Ortho photo: A ground or horizontal view photo of the landscape (orthographic photograph).

Partial cutting: Stand entries, under any of the several silvicultural systems, to cut selected trees and leave desirable trees for various stand objectives. Partial cutting includes harvest methods used for seed tree, shelterwood, selection, and clearcutting with reserves systems.

Permanent bridge: A bridge with an expected life at its present location greater than 15 years.

Permanent deactivation: Deactivation with the expectation that no further access will be required. (Refer to the Engineering Code Training manual.)

Plan proponent: The person or organization required to produce an FDP.

Qualified registered professional: With respect to an activity for which the OPR requires a qualified registered professional, a person who:

a) has appropriate education and experience to carry out the activity, and

b) is a member of, or is licensed by, a regulatory body in British Columbia that has the legislated authority to regulate its members or licensees performing the activity.

Range development: Defined in the *FPC Act* as:

a) a structure or excavation related to the management, for range purposes, of range land or livestock, and

b) a practice, excluding grazing, that is designed to improve range conditions or facilitates more efficient use of range land for range purposes.

Recreation feature: A biological, physical, cultural, or historical feature that has recreational significance or value.

Resource agency: Defined in the *FPC Act* Operational Planning Regulation as any government agency, ministry, or department having jurisdiction over a resource that may be affected by any activity or operation proposed under a higher level plan or operational plan.

Resource feature: As defined in section 51(1) of the *FPC Act,* includes all of the following:

a) a cultural heritage resource

b) a recreation feature

c) a range development

d) any other feature designation in the regulations.

Scenic area: Any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the DM.

Semi-permanent deactivation: Deactivation where regular use of the road is suspended for more than one year, but less than three years, or for roads that are to be deactivated beyond three years. More attention paid to stream crossings and fill slopes than temporary deactivation. (Refer to the Engineering Code Training manual.)

Special forest products: Building logs, mining timbers, props and caps, cribbing, firewood, split stakes, pickets, shingles, shake bolts, and other forest products defined in section 1 of the *FPC Act* and the Special Forest Products Regulation.

Strategic land use planning: Planning at the regional, sub-regional, and, in some cases, local level that results in land allocation and/or resource management direction. Strategic land use planning at the regional and sub-regional levels involves the preparation of resource management zones, objectives, and strategies.

Temporary bridge: A bridge whose expected life at its current location is 15 years or less.

Temporary deactivation: Deactivation where regular use of the road is suspended up to three years. (Refer to the Engineering Code Training manual.)

Terrain hazard ratings:

IV, high likelihood of landslide

V, moderate likelihood of landslides

Unstable or potentially unstable terrain: An area where there is a moderate to high likelihood of landslides.

Very unstable terrain: Terrain units classified as being in Terrain Class V in the coastal terrain stability classification, or as having a very high mass wasting hazard according to the *Mass Wasting Hazard Assessment Key* for Interior sites. For these areas, there is a high likelihood that slope failures will follow harvesting or conventional road-building.

Wilderness area: A part of the provincial forest designated by Order-in-Council as a wilderness area.

Wildlife habitat area (WHA): Defined in the *FPC Act* OPR as a mapped area of land that the deputy minister of MWLAP, or a person authorized by that deputy minister, and the Chief Forester have determined is necessary to meet the habitat requirements of one or more species of identified wildlife.

List of acronyms and abbreviations

AFOP	Administration of Forest Operational Plans guide
DEO	Designated environment official of the MWLAP
DM	District manager of an MOF forest district
FPC Act	*Forest Practices Code of British Columbia Act*
FRR	Forest Road Regulation
HLP	Higher level plan
MEM	Ministry of Energy and Mines
MOF	Ministry of Forests
MWLAP	Ministry of Water, Land and Air Protection
OPR	Operational Planning Regulation
RMA	Riparian management area
RMZ	Riparian management zone
RRZ	Riparian reserve zone
SDM	Statutory decision maker
SP	Silviculture prescription
SPR	Strategic Planning Regulations
THPR	Timber Harvesting Practices Regulation
TSFA	Terrain stability field assessment
VIA	Visual impact assessment
VQO	Visual quality objective